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Remarks
ON THE
TREATMENT OF FRACTURES OF THE PATELLA OF LONG STANDING.

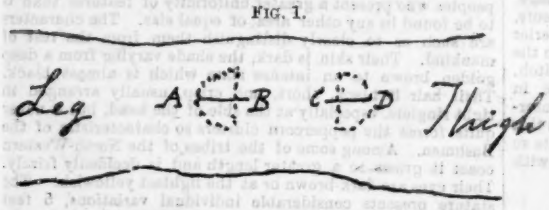
BY LORD LISTER, F.R.S.

SHORTLY before I retired from practice I devised a method of dealing with fractures of the patella of long standing which gave very satisfactory results. I failed to publish it at the time; but a surgical friend having asked my advice in a case of that kind, I wrote for him a detailed description of the procedure, preserving a copy of my letter which I venture, even at this late period, to reproduce.

Fisher's Hotel,
Pitlochry, Scotland.
September 15th, 1895.

MY DEAR DR. ——,—I should have written to you long ago regarding Miss ——'s case had I not known that you could not deal with it till you had returned home after your autumn holiday in Europe; Mr. —— having given me your address in London up to the 15th inst. The limb is no doubt useful as it is; but it is very far from being as strong as we should wish to see it; and assuming, as I do in your case, that the surgeon can look with confidence to an aseptic condition of the wound, I think an endeavour should be made to improve it. Indeed, there is good reason to believe that it will be made as serviceable as ever. I doubt, however, whether you will be able to bring the fragments together without some special mode of procedure. When you visited my wards in King's College Hospital, now several years ago, I showed you a young man on whom I had operated on account of a fracture of the patella of long standing with considerable separation of the fragments, where I had attained my object by means of free division of the quadriceps

FIG. 1.

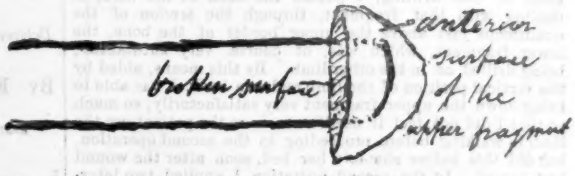


extensor muscle. This, however, is a pretty severe measure and involves, at the best, more or less weakening of the muscle and a long cicatrix.

Since that time I have greatly improved on that practice and have succeeded without touching the quadriceps by proceeding in two stages. The idea was suggested to me by a case published by Dr. Lucas-Championnière of Paris who, being unable to get the fragments into apposition, wired them together nevertheless and left the wire in as an adjuvant connecting medium. It occurred to me that, although such a use of the wire did not seem likely to be very satisfactory as a permanent arrangement, yet it might probably be adopted with great advantage as a temporary expedient; and that after the quadriceps had been gradually stretched by the use of the limb in the position so produced the fragments might by a second operation be brought into contact and might then be wired in the usual way after paring the opposed surfaces. The first case in which I put this idea into practice was a sufficiently testing one. The patient was a young woman of very stout and heavy build who had fractured both patellæ, one of them four years and the other three years before she consulted me. The fragments were in both limbs considerably separated; and in the left, where the bone had been injured four years previously, the separation was so great (about five inches) and the upper fragment at the same time so very small that I at first despaired of being able to do anything.

But on the right side, the upper fragment being of good size and the separation more moderate, I determined to give the plan a trial. I made two short longitudinal incisions (Fig. 1, A B and C D) over the two fragments (shown in dotted line), and having exposed them by a little dissection drilled two holes in the upper one, and passed through them, from without inwards, the ends of a piece of the usual stout silver wire, so that when the ends were pulled upon the middle of the loop of wire would press upon the surface of the fragment, as seen in Fig. 2. Next, passing into the lower incision a blunt instrument (a broad raspatory), I detached from the front of the femur the soft parts lying between the incisions, consisting, of course, only of skin and fat, as the muscle was absent at that part. Then passing a strong pair of forceps from the lower incision under the skin till their blades appeared in the upper incision, I seized the ends of the wire and drew them

FIG. 2.



down into the lower incision. I then drilled two holes in the lower fragment and passed the ends of the wire through them from within outwards, and, after drawing the upper fragment well down, secured them in the usual way and cut the ends short. The immediate result, so far as the fragments were concerned, is indicated in Fig. 3. The incisions in the skin were then brought together by sutures and a dressing (the double cyanide gauze) applied.

In drawing down the upper fragment I found a great advantage from the use of a very strong sharp hook (Fig. 4), the point of which was inserted in the tendon of the quadriceps at its attachment. By this means I was able to exert much greater traction upon the bone than can be done by simply pulling upon the wire, and in order to relax the quadriceps as much as possible the limb was placed in the vertical position before the fragment was pulled down. The dressing having been put on, a trough of Gooch's splint was applied to the limb still in the elevated position, and the same attitude was maintained as the patient was removed to the ward, and continued by attaching the end of the splint to a rope connected with the tripod and pulley used in applying Sayre's plaster-of-Paris jacket. This position of the limb did not cause the patient material

FIG. 3.

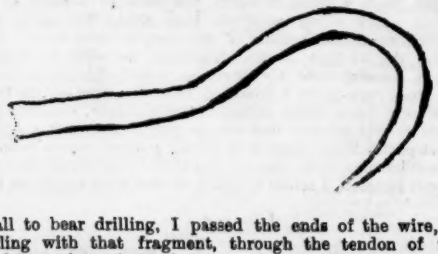
inconvenience, and after two or three days the rope was slackened a little so as to allow the end of the splint to come down an inch or two, and the same thing was repeated every two days or so till the limb could be placed quite horizontal.

This preliminary operation has taken a long time to describe, but in execution it is of the simplest character, no paring of the broken surfaces being done at this stage and there being almost no bleeding and no shock. The wound

having healed (I need hardly say without suppuration) the patient was allowed to leave her bed and left the hospital soon after to practise using the limb.

Before long she was readmitted and the second operation was performed. The lower cicatrix was opened and the wire removed and two interrupted wire sutures placed in the tracks of the previous continued one, the fragments, of course, being this time pared to clear them of fibrous tissue of new formation and produce smooth surfaces for coaptation. This was all satisfactorily effected, though not without the use of the powerful hook and the vertical position of the limb. The result was restoration of the use of the joint in a manner so satisfactory that I determined to try the same procedure in the other limb. The only difference which I made in this case was that, as the upper fragment was too

FIG. 4.



small to bear drilling, I passed the ends of the wire, in dealing with that fragment, through the tendon of the quadriceps just above the upper border of the bone, the lower fragment, which was, of course, very substantial, being drilled as in the other limb. By this means, aided by the vertical position of the limb and the hook, I was able to bring down the upper fragment very satisfactorily, so much so that I did not feel it needful to have the patient use the limb in walking before proceeding to the second operation, but did this before she left her bed, soon after the wound had healed. In the second operation I applied two interrupted sutures, passing them, as in the first operation, through the track in tendon and bone which the first wire had occupied.

The continued wire suture, which was first used by Dr. Hector C. Cameron of Glasgow, has the great advantage, where much traction has to be made upon the fragments, that the pressure of the wire is distributed over the anterior surface of the bone instead of being concentrated upon the limited portion of tissue included in an interrupted stitch. And this is peculiarly valuable in old cases of fracture, in which, as a result of long disuse, the bone undergoes interstitial atrophy, that sometimes makes it very soft. But this suture has the disadvantage that it may tilt the fragments so that their anterior edges do not come well into contact with each other, as indicated in Fig .5.

FIG. 5.

* This was my reason for preferring the interrupted suture in the second stage of the proceeding. In the first stage in which the principal dragging probably takes place this circumstance is a matter of no consequence, as accurate position of the fragments is not then aimed at; and in any case admitting of being dealt with by a single operation, though not without much traction, this defect of the continued suture might be readily got over by introducing a superficial central stitch of comparatively thin wire to insure coaptation of the anterior margins of the fragments.

The effect of the second operation in the above case was such as would have surprised me if I had not seen in other cases how substantial and strong a patella may result from wiring after thorough paring of the surfaces, even when one of the fragments is of quite insignificant size. Without my notes I cannot say how long it is since the case was treated, but I think it must be about four years. And I lately had the satisfaction of hearing from the patient that she could walk well, with strong and supple knee-joints.

In Miss ——'s case I would suggest that you should, in the first instance, before making any incision, but after she has been placed under an anæsthetic, apply the strong sharp hook to the border of the upper fragment through the skin, and, with the limb vertical, ascertain to what extent the quadriceps will yield immediately. If the upper fragment came pretty well down you would proceed to do all by one operation, but if there were the slightest doubt as to the feasibility of this you would adopt the preliminary procedure as in the above case.

Supposing you to be doing all by one operation and that it seems desirable to employ Cameron's continued suture, as the wire will be left in permanently, it would be better to introduce its ends first into the lower fragment and fix them over the upper one, where the fixed ends could not cause inconvenience in kneeling. The strong hook would keep the upper fragment well down during the fixing process. If I had published this case, as I ought perhaps to have done, I should not have had to inflict upon you so large an amount of manuscript.

I remain,
Ever truly yours,
(Signed) JOSEPH LISTER.

The Hunterian Lectures
ON
THE PYGMY AND NEGRO RACES OF AFRICA.

Delivered before the Royal College of Surgeons of England on March 2nd, 4th, and 6th, 1908,

BY F. C. SHRUBSALL, M.A., M.D. CANTAB., M.R.C.P. LOND., M.R.C.S. ENG.,
RESIDENT OFFICER OF THE HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, BROMPTON, LONDON, S.W.

LECTURE II.[1]

Delivered on March 4th.

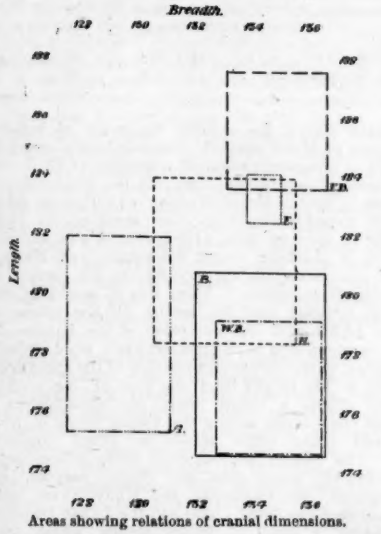
MR. PRESIDENT AND GENTLEMEN,—The greater part of Central and Southern Africa is inhabited by the negro peoples who present a greater uniformity of features than is to be found in any other area of equal size. The characters are such as to clearly distinguish them from the rest of mankind. Their skin is dark, the shade varying from a deep golden brown to an intense slate which is almost black. Their hair is black, short, and crisp, usually arranged in tight ringlets, especially at the side of the head, but it never quite forms the peppercorn clusters so characteristic of the Bushmen. Among some of the tribes of the North-Western coast it grows to a greater length and is decidedly frizzly. Their eyes are dark-brown or at the lightest yellowish. The stature presents considerable individual variations, 5 feet 8 inches being the general average. On the whole, the northern negro is taller than the southern. The upper limbs are proportionally longer than in the white races, the second finger reaching nearly to the knee when the arms are hung straight down by the side. As a result their span is also greater. The proportional length of the upper limb is from 47·5 to 48·5 per cent. of the stature of the negro, as compared with 45 per cent. in the European canon. A great part of this difference depends on the forearm, which averages from 17 to 18 per cent. in the negro as against 14 per cent. in the European. The negro also exceeds the white in the length of the lower limb but the proportion which this bears to the stature presents considerable individual and tribal variations. Sir H. H. Johnston has stated that the "mass of black negroes may be divided into the short-legged and the long-legged." Good examples of the long-legged class are the Nilotic tribes of the White Nile and the north-east coast of the Victoria Nyanza but the type appears throughout Southern Africa. "The short-legged type appears among the Lendu, the Jur of the Bahr el Ghazal, the tribes on the fringes of the Congo forest, and in West Africa among the Kru and others." In a series of measurements made in Uganda this character served to distinguish the tribes of Bantu speech from the others and the results obtained were subsequently found to coincide with other lines of evidence.

[1] Lecture I. was published in THE LANCET of April 4th, 1908, p. 983.

Up to the present the number of available measurements is too small to permit of a general classification on this basis. The legs of the negro are described as slender, with a poor development of calf muscle, but this is not always the case. The head is long, usually dolichocephalic, but is broader among the natives of the south and east than among those of the north and west. In the forest zone of central Africa, from the great lakes to the west coast, a short-headed element appears, probably from some strains of pygmy blood. A considerable degree of prognathism is common, being most marked among the peoples of the forest zone. It is more marked on the west coast than in the lake region or in South Africa. It also appears to be more prevalent in German East Africa than in the British territories to the north and south. The nose is very broad and flat, but in areas in the central Soudan, the great lakes district, and downwards through the central plateau to South-East Africa are tribes in which many individuals present a much higher and narrower nose with a better-formed bridge. Again, it may be noted that the tribes in German West Africa are more platyrhine. Scanty as is our present information as to this character it would appear to be the most available medium for classification on a physical basis.

A surprising degree of uniformity of features appears to exist throughout negro Africa. Sir H. H. Johnston declared that "if you took a negro from the Gold Coast of West Africa and passed him off amongst a number of Nyasa natives and if he were not remarkably distinguished from them by dress or tribal marks it would not be easy to pick him out." Again, "The average man or woman of Liberia

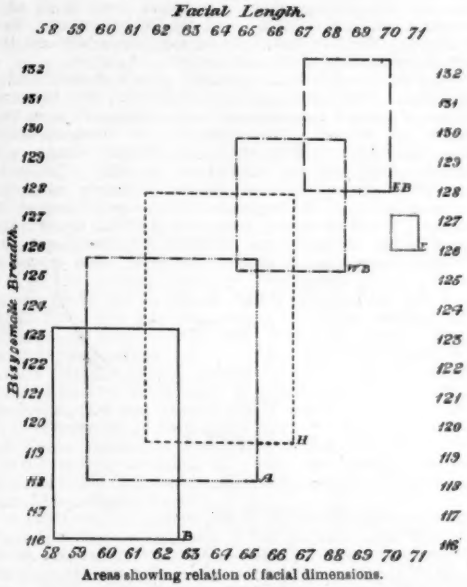
FIG. 1.



Areas showing relations of cranial dimensions.

might very well pass current as a native of Uganda, of the Swahili coast, Nyasaland, Ashanti, or Old Calabar." Other travellers bear similar testimony, which is amply confirmed by photographs from all quarters. We must therefore believe in a fundamental negro type spread evenly over the southern half of the African continent. Along the north of the negro zone in the Soudan, in the lakes district, and throughout central and south-eastern South Africa, are tribes with many individuals of a higher type, evidently the results of a racial cross. These types also present close resemblances to one another irrespectively of their geographical position, as may be illustrated by a comparison of the Mandingo, the Zanzibaris, and the Zulu-Kaffirs. Sporadically this type appears throughout Bantu-speaking Africa. Before considering the relations and origin of this higher type it is necessary to adopt some form of classification; the simplest and most usual rests on a linguistic basis. By this the negro peoples can be divided into two main divisions along a line passing from the Rio del Rey across the watershed between the Chad and the Congo basins at the 5° N. parallel, trending south-east through the forests of the Welle to the Semliki, touching the Victoria Nyanza save on its north-eastern coast, and passing due east from Kavirondo Bay to the sources of the Tana, thence along that river to the Indian Ocean. South of this line all the negro peoples speak languages bearing a very close resemblance to one another which are classed together under the designation Bantu. North of this line

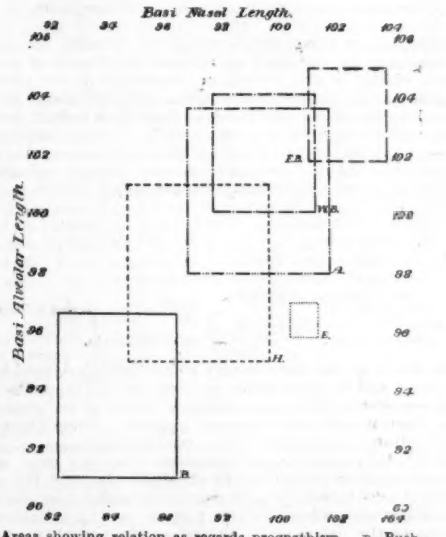
FIG. 2.



Areas showing relation of facial dimensions.

are spoken a large number of different languages which have been classified into some 19 main divisions. These may for convenience be termed Soudanese. This Soudanese section has been further divided by Keane and others into eastern, central, and western groups. The more important tribes in each group are—

FIG. 3.



Areas showing relation as regards prognathism. B. Bushmen. W B, Western Bantu. H, Hottentot. E B, Eastern Bantu. A, Ashanti. E, Egyptian.

Eastern group.—The Barun and Boma on the north-western slopes and outliers of the Abyssinian plateau; the Barta, Dinka, Shilluk, and Bari of the upper Nile valley; and the Bongo, Zandeh, and Monbottu of the Bahr-el-Ghazal, and the

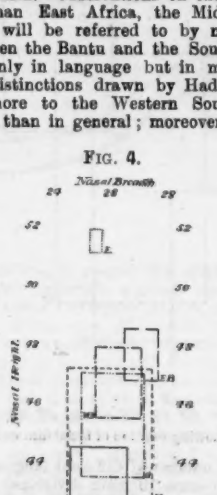
Zeriba country. These tribes appear to be of a pure negro stock. With these perhaps should be grouped the more mixed Suk-Turkana, Elgumi, Nandi, and possibly even the Masai and the Anderobo.

Central group.—The Baghirmi, Kanuri, Sonhray, and Hausa. These tribes are largely of mixed blood.

Western group.—The Fulah and Wolof, of mixed origin; the Mandingo, many of whom are of mixed ancestry; the Kru and Vai, among whom individuals show traces of a distant racial intermixture; and the Tshi (Ashanti), Ewe (Dahomey), Yoruba (Benin), Mossi, and others who are the best representatives of the true negro.

The Bantu peoples do not so readily permit of classification other than by their geographical distribution. For the comparison of skulls I have adopted a provisional division into eastern and western. Observations on the living are available from German East Africa, the Middle Congo, and Uganda, which will be referred to by name. The main division is between the Bantu and the Soudanese who offer contrasts not only in language but in many features of culture. The distinctions drawn by Haddon, Keane, and others apply more to the Western Soudanese and the Southern Bantu than in general; moreover, some degree of

FIG. 4.



Areas showing relation as to nasal height and breadth.

overlap occurs along the boundaries. Broadly, the negro culture may be described as agricultural though in places stock raising is also carried on, especially in the Central Soudan and among the Bantu of the south and east. It has been suggested that this is due to Hamitic influence, but it seems also to depend in large measure on the suitability of the country for pasturage and on the occurrence or otherwise of raiders. The manufacture of pottery, carving, and metallurgy are common arts, though certain tribes exhibit special skill.

Soudanese.	*Bantu.*
Huts.—Gable roofed.	... Rounded with pointed roofs.
Spears.—With socketed heads.	... Fastened to shaft by a spike.
Bow-strings.—Vegetable fibre.	... Animal fibre.
Weapons.—Swords, plaited shields; no clubs.	... Clubs, skin or wooden shields.
Clothing and ornaments.—Of vegetable origin.	... Of animal origin.

In the west fetishism is very highly developed, masks are common, and secret societies are frequent; in the south and east ancestor worship is prevalent, fetishism is undeveloped, and there are said to be no secret societies. These linguistic and cultural distinctions being established, it seemed important to endeavour to determine how far they were accompanied by differences in physique, also how far such differences if found are to be ascribed to racial intermixture. The materials available for this purpose consist of measurements of the living made by various observers and of the skulls and skeletons in European museums, and lastly, the comparison of typical photographs. These may be considered in order. The measurements of the living are unfortunately few in number and in most cases have included a very small selection of characters. The stature shows no very characteristic features.

	Mm.	ft.	in.
Western Soudanese.			
Sierra Leone ...	1735 =	5	8½
Lagos	1800 =	5	10½
Old Calabar ...	1715 =	5	7½
Guinea Coast ...	1724 =	5	7¾
Eastern Soudanese.			
Nilotic Negroes	1800 =	5	10½
Zandeh	1725 =	5	8
Central Soudanese.			
North Nigeria...	1697 =	5	6¾
M'Zab (slaves)...	1620		
Bantu.			
Uganda	1715 =	5	7½
Nyasaland... ...	1730 =	5	8
Congo	1710 =	5	7½
Bechuana	1685 =	5	6½
Zulu	1710 =	5	7½

The cephalic index yields similar insignificant results.

Western Soudanese.	
Sierra Leone	75·9
Lagos...	75·3
Old Calabar	73·3
Ashanti	75·0
Eastern Soudanese.	
Nilotic Negroes	77·7
Central Soudanese.	
North Nigeria	76·0
M'Zab (slaves)	74·2
Bantu.	
Uganda	75·6
Congo	75·4
Nyasa	75·0
South-East Africa	74·8

Better results follow the percentage classification of this index under three heads, representing long, medium, and broad skulls.

—	Dolicho-cephalic.	Mesati-cephalic.	Brachy-cephalic.
	Per cent.	Per cent.	Per cent.
Bantu—			
North Nyasaland	40·1	51·9	8·0
Unyamwesi, &c.	54·0	39·5	6·6
Uganda	60·8	35·8	3·5
Middle Congo	59·0	38·0	3·0
Western Soudanese	80·0	20·0	—

The table shows the greater frequency of broad heads among the southern people. The numbers in every case are so small as to render statistical treatment of little avail. It is particularly unfortunate that very few measurements have been made on the living Western and Central Soudanese. Further investigations have been made on the peoples of Uganda, of German East Africa, and of the Middle Congo by Sir H. H. Johnston, Count Schweinitz, and Mense, which I have summarised in an appendix to the former author's "Uganda Protectorate." From this it would appear that the nose is broad and flat among all the tribes of East Central Africa with the exception of the Bahima and the Masai, in whom it is more prominent and more arched. The nasal index, or the percentage relation of the breadth between the alæ to the height from the root of the nose to the septum, affords a rough basis for classification. The broadest noses occur among the pygmy tribes of the forest zone and those taller tribes in direct contact with them. The Nilotic negroes have lower indices and therefore narrower noses than the Bantu negroes, such as the Baganda, the Kavirondo, the Wanyamwesi, and other tribes between the Great Lakes and the Indian Ocean. There is, however, a band of tribes, among whom many individuals present narrow nasal orifices, stretching along the higher ground from the west of Lake Victoria and midway between Lake Tanganyika and the sea. These include the Bahima, Basoga, Watuta, Wagogo, and the Angoni, who link up with the Kaffir tribes of South Africa among whom these features also appear. The eastern group of tribes comprising the Suk-Turkana, Nandi, Andorobo, Masai, &c., also presents lower indices than does either the Nilotic negro or the first-mentioned group of Bantu. If it be remembered that the adjacent Hamitic peoples, whether Galla, Somali, or Abyssinian, have narrower noses, it will be seen that this affords some evidence of racial intermixture spreading from the north-east. The proportions of the various segments of the body afford similar evidence, the Bantu peoples of Uganda being characterised by relatively longer arms, shorter legs, and longer trunks than the Nilotic negroes or the tribes of the eastern plateau. In these characters they resemble the pygmies and to a less degree the Bushmen-Hottentots which might well be due to some mixed strain of blood if these Lake Bantu tribes represent the first invaders of the territory of the former groups. The type with the narrower nasal orifices is also characterised by

longer legs and may have served to spread the long-legged negro throughout the southern area.

The two features of the nasal index and the proportion of the limbs promise to yield much information for the classification of the negro peoples and it is to be hoped that ample data may be forthcoming from those anthropologists who are actually working in the field, but their numbers are few.

The materials for the study of the osteology of the negro peoples are somewhat more extensive, at least so far as skulls are concerned. Unfortunately, in the past a number of specimens have been sent to English and other museums without any exact information as to the tribe to which they belonged and have to be entered in the catalogues as negroes from unknown localities, which renders them practically useless for comparative study. Good collections of skulls are available from the Gold Coast, Ashanti, and Dahomey, representing the Western Soudanese, from French Congo, South Africa, Nyasaland, and the Kilimanjaro district; while there are a few from the upper Nile, Uganda, and the Congo basin. Material for the study of the rest of the skeleton is almost entirely lacking. By grouping together these skulls it was possible to obtain sufficient numbers to yield results. The grouping decided on was to place all the Ashanti and Dahoman skulls together, to make a group of Zulu-Kaffirs, another of the specimens from Nyasaland, these being subsequently found so similar that ultimately they were treated as one group of Eastern Bantu. The skulls from French Congo were grouped as Western Bantu and the Djagga collection at Berlin was treated separately. Owing to the almost complete absence of female specimens from some of the groups male skulls only have been used for comparative treatment. It at once appeared that there was a marked difference between these groups: the Western Bantu showed many more broad-headed skulls and much more prognathism than the Eastern group. The Ashanti were more prognathous and more dolichocephalic than the Eastern Bantu but slightly less prognathous than the Western. Both Ashanti and Western Bantu are very platyrhine, but the Djagga are particularly remarkable for the extensive prevalence of this feature. It may be noted that the few skulls from British East Africa and from the Congo side of Tanganyika do not show this to any greater extent than the Eastern Bantu. The skulls of the Eastern group are also in almost all dimensions larger than the rest. To the eye the resemblances rather than the differences between individual skulls certainly appear the more prominent, but when the average measurements and their standard deviations are considered the grounds for grouping are quite evident.

For each skull a selection of nine measurements, out of some 40 actually made, has been taken and the averages and standard deviations of each group have been calculated. The averages were then charted in pairs on squared paper, the one dimension being used as ordinates, the other as abscissæ. The pairs were so chosen that the two dimensions compared in the construction of the ordinary indices were recorded simultaneously. Thus in the figure showing the comparison of length and breadth of the skull the lengths were used as ordinates and the breadths as abscissæ. Thus the average length of the Eastern Bantu skull (average of 116) was 186·3 millimetres and the average breadth 135·4 millimetres, so that a point at the intersection of the corresponding lines on the diagram represents the average for both characters. It has been shown that the chances are approximately 1000 : 1 that the average of any subsequent group of the same size will fall within the limits of this average $\pm 3\sqrt{\frac{\text{standard deviation}}{\text{number of observations.}}}$ The standard deviation of the skull length was 6·8132 and the number of skulls 116. The value of $\frac{s}{\sqrt{n}}$ was therefore $\frac{6{\cdot}8132}{\sqrt{116}}$, i.e, 0·6592; three times this or 1·9 represents the amount to be added to, or subtracted from, the average in order to obtain such a range that the chances are 1000 : 1 that all subsequent averages of similar groups would fall within it. In this case the range is 186·3 ± 1·9, i.e., from 184·4 to 188·2. This range is then marked on the diagram. Similarly the range in breadth is $135{\cdot}4 \pm 3 \times \frac{5{\cdot}9152}{\sqrt{116}}$—i.e., ± 1·7 or 133·7 to 137·1. This also is charted on the diagram and the rectangle of which these values are the sides is constructed. Within the area thus included the chances are 1000 : 1 that the point representing the average of any subsequent group of the same kind would fall. When series of such rectangles constructed for different groups of skulls do not overlap the odds that the differences between the dimensions are not due to mere chance selection will exceed 1000 : 1. In the accompanying diagrams such rectangles are shown for the Western Soudanese negro, the Eastern and Western Bantu, the Bushmen and Hottentots, and for the Egyptians, the latter representing the only available measurements of skulls of a Hamitic race. These are from the measurements recorded in Arthur Thomson and Randall McIver's "Ancient Races of the Thebaid"; the others are entirely from my own measurements.

Six pairs of measurements are contrasted. The Bushmen, Hottentots, and Eastern Bantu may be noticed in each case to form an ascending series. The Hottentots are more nearly a mean between the Bushmen and Bantu than between the Bushmen and Egyptians, which supports the argument that whatever be the origin of the Hottentot race it has some negro blood. The Eastern Bantu are clearly marked off from the Ashanti (Western Soudanese) group. The Western Bantu are in many respects intermediate but are distinct from the Soudanese in a sufficient number of characters to show that a real difference exists. The Egyptian group may be noted to differ from the Ashanti in the same direction as the Eastern Bantu but in most cases to present smaller dimensions. It would therefore scarcely seem certain that the Eastern Bantu could be looked on as a cross between the negro and the Egyptian, but rather that some similar element to that found in Egypt might have entered into their constitution. Such an element is to be looked for in the Southern Hamites or Ethiopians represented by the Abyssinians or Somali.

The exhibition of photographs affords the simplest method of demonstrating the existence of race mixture. The line of contact between the negro and the white races took place mainly along the Nile valley, across the Sahara into the Central Soudan, the direct route up the Nile to the Great Lakes being closed by the marshes of the Sobat-Nile confluence. A further line was from the Abyssinian highlands to the lake country, and later a certain degree of penetration occurred from the coast. The white races affecting the Soudan were the Hamitic Egyptian and Berber peoples. A distinct gradation from white to negro can be traced: (1) from Morocco to the Gambia; (2) from Egypt through Kordofan to the Central Soudan and the Gold Coast; and (3) from Abyssinia and Somaliland, past the Great Lakes plateau into Southern Africa; but in this area the negro is of a higher type.

While this offers a reasonable explanation of the superior types of Bantu and Central Soudanese other differences between the northern and southern negro have to be explained. Several observers in British Central Africa, and particularly Sir H. H. Johnston, have noted that labourers belonging to the Bechuana and other Kaffir tribes coming to work in Nyasaland could be distinguished by a greater flatness of the face which could well be accounted for by a slight admixture of Bushman blood, and it seems that it is those tribes who have been longest in the south who present this feature to the greatest extent. The greater prognathism and the appearance of a broad-headed element in the Western Bantu receive an explanation from the presence therein of the prognathous pygmy. Also in a large part of French Congo and the Camerun the Bantu is a recent intruder pressing up in successive waves from the Congo basin into the coastal districts, each tribe forcing on its predecessor. The tribes near the coast probably contain much northern negro blood; the later comers are in large part of the superior type. Johnston describes them as tall, upright, with a fine face, high thin nose, beard, moustache, and a plentiful crop of hair; the others ill-shaped, loosely made, with splay feet, high calves, retreating chin, no hair on the face, and the wool on the head close and crisply curled. It is the presence of the superior type which marks off the Bantu from the Western negro. Probably the type in the Central Soudani s very similar, but of this there is as yet not sufficient evidence. As can be seen from a study of African history, it is this type that has made such progress as has occurred in negro Africa, the unmixed type really appearing to be retrograde in every tendency.

A Clinical Lecture

ON

THE DIAGNOSIS AND TREATMENT OF MALIGNANT DISEASE OF THE PROSTATE.

Delivered at the Medical Graduates' College, London, on Feb. 3rd, 1908,

BY J. W. THOMSON WALKER, M.B. EDIN., F.R.C.S. ENG.,

SURGEON TO OUT-PATIENTS AT THE HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITALS; ASSISTANT SURGEON TO ST. PETER'S HOSPITAL FOR STONE.

IN a statistical study[1] of 16 cases of malignant disease of the prostate collected from the records of 6732 cases of cancer in the Middlesex Hospital I estimated that the ratio of cancer of the prostate to other forms of cancer was 2·3 per 1000. Previous writers (Tauchon, Gürlt, Heinemann) had given a less ratio. From the frequency with which cancer of the prostate is now met with in surgical practice I believe that these figures under-estimate the actual numbers. More important for the purposes of clinical diagnosis, however, is the relative frequency of malignant and simple enlargement of the prostate. In order to obtain some information on this point I have taken 242 consecutive cases of enlargement of the prostate which have passed through my hands and find that the diagnosis of malignant disease of the prostate was made in 57 cases and of simple enlargement in the remaining cases. That no possibility of cavil may exist in regard to the diagnosis, 17 of these cases have been excluded from the list and have been put under the category of "doubtful cases." The remaining 40 cases afford no opportunity for criticism. In 11 of them the diagnosis was confirmed by operation and microscopical examination and in the remaining 29 the disease was either so far advanced when the patient first came under my observation or the progress of the disease was such that the diagnosis was indisputable. This gives a proportion of 16·5 per cent. of malignant growths in the total number of cases of enlarged prostate.

I shall proceed to discuss the symptomatology of these cases and my remarks will be based entirely upon them. The average age of the 40 cases was 65 years and, as most of them applied for advice within a comparatively short time after the onset of the symptoms, this age may be taken to represent the time of life at which symptoms first appear. In one patient symptoms commenced at the age of 44 and in another at 46 years. Malignant disease of the prostate is, however, of slow growth and the symptoms which it produces are due to urethral obstruction or nerve pressure, so that the disease has spread widely before they appear. It is probable, therefore, that the growth actually commences at a much earlier age. The age is practically the same as the average age of the 185 cases of simple enlargement of the prostate, which was 66 years. Age is not, therefore, of great value in making a diagnosis, although we may suspect that an enlargement of the prostate which commences much under 50 is more likely to be malignant than simple.

Difficult micturition; retention.—Difficult micturition is the cardinal symptom of malignant disease of the prostate. It is the most frequent, the most prominent, and usually the earliest symptom. Obstruction to the outflow of urine was present to a marked degree in 37 of the 40 cases (92·5 per cent.) and it was the first symptom of disease in 22 (55 per cent.). A frequent history (22 cases, 55 per cent.) was a gradual onset of difficulty. The patient complained that he could not start passing urine promptly but had to wait a little; the stream was small and might drop down instead of being projected with force and the last part of the urine dribbled or there was some after-dribbling when the act had apparently been completed. With the gradually increasing difficulty of micturition there were in a few cases (4 cases) one or several attacks of retention and eventually the patient might become partly (7 cases) or completely (2 cases) dependent upon the catheter. In other cases (14 cases) the onset was sudden and in some of these (8 cases) there was an initial attack of complete retention. The bladder usually partly recovered its tone after this initial attack.

Frequent micturition.—Next to difficult micturition an increase in the frequency of the act is the symptom of which the patients most often complain. There was a well-marked increase in the number of times urine was passed in 35 cases (87·5 per cent.). This was the initial symptom in five cases (12·5 per cent.) and it was accompanied by pain in one other case. In only two cases was the increased frequency entirely diurnal; in all other cases the patient passed urine at intervals during the night as well. In a few of these the prostatic type of nocturnal micturition was observed; the patient rested for the first four or five hours of the night and rose at 2 or 3 o'clock and several times after this. In most cases, however, the intervals were equally spaced at three or two hours throughout the night. The frequent micturition was not due to a septic condition of the urine, for in 10 cases where no catheter or other instrument had been passed and the urine was clear diurnal and nocturnal frequency was present. In four patients there was continual dribbling from a bladder which was not distended. In only one of these was the urine foul and indicative of chronic cystitis. In the others it was either clear or slightly cloudy. The growth had spread widely in all four cases. In two it formed a large hard mass above the pubes, infiltrating the abdominal wall in one. In the other two cases it had spread up the bladder base beyond the reach of the finger. These cases, with the exception of the one with foul urine, were remarkable for the absence of bladder symptoms until the dribbling commenced. The growth seems to have spread outside the bladder along the anterior and posterior walls and so fixed the urethra that it acted as an immobile tube which drained off the urine.

Pain.—Pain was slightly less often present than the previous symptoms, being noted in 29 cases (72·5 per cent.). It was the initial symptom in ten cases.

There were three types of pain—namely, pain connected with micturition, pain apart from micturition but due to urinary obstruction, and pain independent of micturition or blockage. The pain associated with micturition was usually along the urethra and in the penis, being most marked on the under surface of the glans about the base of the frænum or on the upper surface just behind the corona. It was experienced either at the commencement of micturition or after the act. The pain was aching and not severe. Pain on micturition was perineal in one case and in another spread to the groins and shot down the legs to the soles of the feet. In three cases it was suprapubic. Aching over both kidneys resulted from urinary obstruction in three cases. More striking and characteristic was pain apart from micturition and unconnected with urinary blockage. This was observed in the penis, or urethra, or at the root of the penis or the peno-scrotal junction. In some cases the rectum was the seat of pain and in one the anus was affected. There was frequently heavy aching pain in the lower part of the spine and across the base of the sacrum, and also at the sacro-iliac synchondroses and sometimes in the hip-joints. Suprapubic pain was not uncommon; perineal pain was noted in one case. There was pain in the groins and in the legs in two cases. In one the pain was distributed over the front of the thighs as far as the knees and in another it extended down the back of the thighs. No masses of enlarged glands could be felt in the pelvis in these cases. The pain in all these cases was sufficiently severe to cause distress, but in none of them was it agonising in character. What was remarkable about it was its constant presence in a case of urinary disease, its persistence over a period of months or years, the absence of any connexion with micturition or movement, and the disappointing effect of drug treatment.

I shall outline an illustrative case. A man, aged 58 years, was sent to me by Dr. J. P. Atkinson of Saffron Walden having suffered for nine months from pain in the lower part of the spine and both legs. There were difficulty in passing urine at times and some after-dribbling. He passed urine five or six times during the day and lately had risen from three to seven times at night. He had been treated by a surgeon in a provincial town for sciatica. Dr. Atkinson suspected that the pain originated in prostatic disease. When I examined him in November, 1905, he complained of constant pain at the base of the sacrum and in each sacro-iliac synchondrosis and in the lower part of the sacrum and coccyx. The pain extended along the posterior aspect of each thigh to the

[1] The Archives of the Middlesex Hospital, vol. v., 1905.

knee. There was pain in each groin and in the perineum. He had not lost weight. The prostate was stony hard, fixed, and irregular, and a mass of infiltration extended up the bladder base. (Fig. 5.) At several points the growth was commencing to break through the rectal wall. There were no enlarged lymph glands in the lower pelvis or groins. The after-history was interesting and instructive. He returned to the surgeon under whose care he had formerly been, the diagnosis of malignant disease of the prostate was set aside, and the patient was sent to Droitwich. Eventually "prostatic abscess" was diagnosed and a perineal incision was made through which the malignant growth soon fungated, and when I heard of the patient in May, 1907, he was rapidly sinking.

Hæmaturia.—A misleading feature in the symptomatology of prostatic carcinoma is the absence in a majority of cases of hæmaturia. Blood was observed in the urine in only five out of 40 cases (12·5 per cent.) and in only one case was hæmaturia the initial symptom. In four cases blood was noticed in small quantity on one or two occasions; in one case there was a gradual steady increase in the blood in the urine for 18 months. The blood was dark or bright and occurred in one case at the beginning of micturition and in another at the finish. The rarity of hæmaturia is capable of anatomical explanation. The new growth is usually of the hard scirrhus type, which is comparatively avascular and is not prone to ulcerate. And further, the direction of spread is seldom towards the interior of the bladder and the prostatic urethra is not directly involved.

Emaciation.—Emaciation occurred in 15 cases (37·5 per cent.) but in most it was slight. In four cases it was rapid and extreme but in two of these the emaciation was due to urinary septicæmia. This fallacy much reduces the value of emaciation as a sign of malignancy in diseases of the urinary tract. Loss of flesh is rapid and extreme in all urinary diseases when sepsis has spread to the kidneys and is combined with urinary obstruction or even where renal sepsis without obstruction exists. In prostatic disease both these factors are frequently combined.

Intestinal obstruction.—Extensive infiltration of the rectal wall caused obstruction of the bowel in two cases.

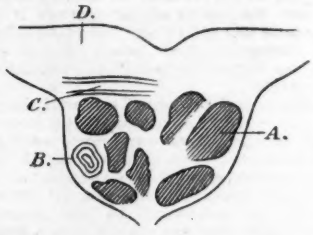
I shall very briefly compare these symptoms with those of the diseases most likely to be confused with cancer of the prostate. Simple enlargement of the prostate usually occurs at the same age as malignant disease but if the symptoms appear much before the age of 50 years the disease is more likely to be malignant than benign. The early symptoms of simple enlargement are more often those of irritation than of obstruction, frequent micturition rather than difficulty, although cases occur where the symptoms are largely or solely those of obstruction from the beginning. The frequent micturition of simple enlargement unless caused by cystitis usually assumes a special type. The patient rests during the first part of the night and rises at 2 or 3 o'clock in the morning and several times after this. Pain apart from micturition and independent of obstruction such as I have described in malignant disease is not observed in simple enlargement. Hæmaturia is a much more frequent symptom of simple than of malignant enlargement. Emaciation does not occur in simple enlargement but this sign is only of diagnostic value where the urine is aseptic. The symptoms caused by stricture of the urethra may closely resemble those of malignant disease of the prostate but the pain and emaciation are absent and the symptoms usually commence at a much earlier age. There are some cases of disease of the spinal cord that closely simulate the symptoms of stricture and malignant disease of the prostate. In these cases the bladder atony is a more prominent feature than the other symptoms of nervous disease. The diagnosis may only be made by proving the absence of urethral obstruction and of any change in the prostate and by careful examination of the nervous system.

Examination of the patient. 1. *Enlargement of lymph glands.*—The inguinal lymph glands are frequently the seat of secondary deposit and are enlarged, hard, and discrete. They are enlarged in 16 per cent. of cases. In a doubtful case I have removed an enlarged inguinal gland and found a deposit of carcinoma in it. The lymph glands ranged along the iliac vessels and even along the aorta may be felt enlarged in advanced cases.

2. *Rectal examination: (a) the prostate.*—The characters displayed by a malignant enlargement of the prostate are hardness, irregularity, and fixation. These require some discussion. The consistence of a healthy prostate is elastic. Where chronic prostatitis is present it is firm and tough. In tuberculous disease there are hard nodules. The gland is stony hard where a prostatic calculus or malignant growth exists. In cancer the first impression gained by the finger is nearly always that a stone is present. Whether there is a single large mass or a nodule or many nodules this stony hardness is almost constantly present. In many malignant prostates there are small points or ridges on the rectal surface which are as hard and sharp as the edge of a flint and which appear to project through the rectal mucous membrane. There are a few doubtful cases so far as hardness is concerned. A malignant prostate may be small and very tough, but some other sign may be present by which the suspicion of malignancy is confirmed.

Irregularity of contour is a characteristic feature of cancer of the prostate. There are several types to which it is convenient to refer at this point. 1. The most frequent and characteristic form is a moderate enlargement made up of numerous irregular hard nodules separated by clefts and fissures. (Fig. 1.) The outline of the

FIG. 1.



Malignant disease of the prostate, nodular form. A, Hard, discrete nodules. B, Sharp point projecting through wall of rectum. C, Hard ridge. D, Distended thickened seminal vesicles.

prostate does not show much alteration. At a fairly early period in any form of malignant disease of the prostate the seminal vesicles may be felt as large thick-walled masses lying above the prostate. The ducts are blocked and the vesicles are in a state of dilatation and chronic inflammation. 2. In a second form the prostate retains its natural contour and surface. (Fig. 2.) It is moderately enlarged, bi-lobed,

FIG. 2.

Malignant disease of prostate, smooth regular form.

smooth on the rectal surface, and it may be moveable; it is stony hard. Eight of my cases were of this type and among them was the case of total extirpation that I shall describe later. 3. A form more difficult to diagnose is a small, broad, flat, hard fixed prostate the outline of which is difficult to define. (Fig. 3.) 4. There are a few cases

FIG. 3.

Malignant disease of prostate, small shrunken form.

where the change affects only one lobe which is enlarged and hard or which may contain a hard buried nodule, while the remaining lobe may be natural in size and consistence. (Fig. 4.) The last character of the malignant prostate is its fixation. Mobility in a healthy prostate is not readily

appreciated by the unpractised finger. There is no mobility approaching that of the uterus or kidney, but the prostate has a mobility which becomes evident when a healthy organ is compared with a malignant one. Chronic inflammation which has spread from the prostate or vesicles to the pelvic

FIG. 4.

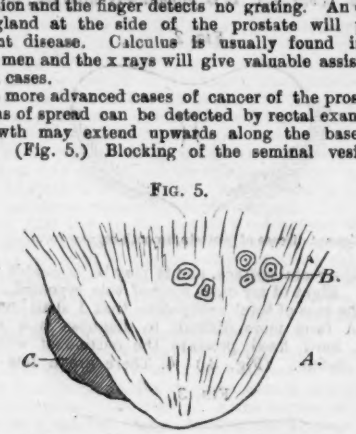
Malignant disease of left lobe of prostate. A, Hard nodule. B, Enlarged lymph gland.

areolar tissue may fix the prostate, but in doing so the tissues are matted and the outline of the prostate is obscured. There are a notable lack of hardness and a long inflammatory history that distinguish these cases. A few malignant prostates of the smooth, symmetrical, well-defined type retain their mobility.

Before passing on to the spread of cancer of the prostate I shall make a note in regard to the diagnosis from prostatic calculus. The two conditions may present some similarity on rectal examination. The nodular form of malignant prostate gives the impression of a number of irregular calculi imbedded in the prostatic substance. But a number of large calculi, as these would be, are packed closely together into a single mass and usually lie in a single cavity so that the finger can detect a grating as they rub together. The rectal surface is smooth, not irregular, and there are no sharp points or hard ridges projecting through the rectal mucous membrane. Such a collection of stones almost always lies in a cavity communicating with the urethra and can be detected with the sound. The smooth well-defined type of malignant prostate may resemble a large single calculus. In the cases I have observed such a calculus always occupies a distended prostatic urethra and is readily distinguished by the sound. A single hard nodule in one lobe may be difficult to diagnose where the sound gives no information and the finger detects no grating. An enlarged lymph gland at the side of the prostate will point to malignant disease. Calculus is usually found in much younger men and the x rays will give valuable assistance in doubtful cases.

In the more advanced cases of cancer of the prostate two directions of spread can be detected by rectal examination. The growth may extend upwards along the base of the bladder. (Fig. 5.) Blocking of the seminal vesicles, to

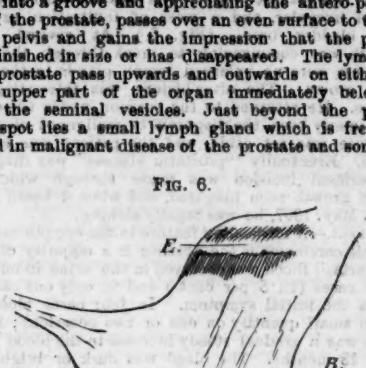
FIG. 5.



Malignant disease of the prostate spreading upwards along the bladder base. A, Prostate. B, Hard points projecting through the wall of the rectum. C, Commencing lateral spread.

which I have already referred, may simulate this, but where the disease has actually spread in this direction the contour of the vesicles is obliterated and a hard mass passes up beyond this level. (Fig. 6.) One side has usually spread higher than the other. Hard stony ridges may be felt on the extension. High up the growth spreads outwards towards the side of the pelvis and it may sometimes be felt encircling the wall of the rectum. In the second direction of spread the growth extends laterally so that the sulcus on either side of the prostate is filled and the finger, instead of dipping into a groove and appreciating the antero-posterior depth of the prostate, passes over an even surface to the side of the pelvis and gains the impression that the prostate has diminished in size or has disappeared. The lymphatics of the prostate pass upwards and outwards on either side at the upper part of the organ immediately below and outside the seminal vesicles. Just beyond the prostate at this spot lies a small lymph gland which is frequently enlarged in malignant disease of the prostate and sometimes

FIG. 6.



Nodular cancer of the prostate spreading laterally and along the bladder base. A, Prostate. B, Upward extension. C, Nodules in substance of prostate. D, Lateral extension. E, Hard ridge.

also in vesical carcinoma. It is the first link of a chain of lymphatic glands that pass out to the internal iliac group.

Treatment.—A large number of cases of cancer of the prostate have progressed too far when the diagnosis is made for any radical operation to be considered. Treatment will then consist in relieving symptoms. The occasional passage of a good-sized metal bougie may give much relief from the difficulty of micturition, but if hæmaturia is a feature of the case instruments should be avoided. Catheter life may become necessary from increasing obstruction, or a permanent suprapubic fistula may be demanded. For the pain nothing short of opium will suffice and there is no reason for withholding it. I have elsewhere[2] given an account of the operations that have been performed for malignant disease of the prostate and shall here confine my remarks to my own experience. The methods open to choice are the suprapubic and the perineal.

1. *Suprapubic enucleation.*—On opening the bladder in an early case of malignant disease of the prostate it is usually found that the organ does not project into the bladder or at most forms a projecting rim around the opening of the urethra. The mucous membrane is leathery and bound down, and tough bands pass outwards and backwards beneath the bladder wall. The internal meatus is rigid. The forefinger forced into it is tightly gripped. Attempts to commence enucleation by forcing the finger through the posterior wall of the prostatic urethra or through the mucous membrane on the vesical surface of the prostate are unavailing or only succeed after a struggle. The assistance of scissors or a knife may be required. The digital enucleation once commenced is continued with much difficulty and without any line of guidance until finally several masses of tissue of india-rubber-like consistence are torn out. There remains a space like an egg-cup, with walls of a tough leathery consistence, from which scraps of tissue can still be scraped. The bleeding from this cavity is remarkably slight. There are other cases where the enucleation commences without great difficulty but the gland is firmly adherent to the sheath and is incompletely separated from it after a struggle. In another type of case one lobe is easily shelled out and the second lobe is partly enucleated, leaving a thick shell of adherent tissue. I have operated on four cases of this type by the suprapubic route. One of these died from shock

[2] The Practitioner, February, 1908.

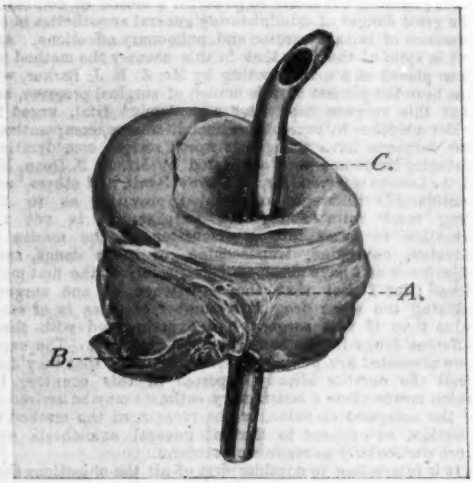
15 hours after the operation, another died two and a half months after the enucleation from septic pyelonephritis which had existed before the operation, another succumbed to bronchitis three months after the operation without having shown signs of recurrence of the growth, and the last case is well eight months after the operation but has had some hæmorrhage pointing to recurrence of disease. It cannot be said that suprapubic enucleation is satisfactory as an operation for these cases or that the after-results afford encouragement to continue this line of attack.

2. *Perineal operations.*—There are two methods by which a cancerous prostate may be removed by the perineal route: (*a*) Prostatectomy as it is performed for the removal of benign enlargement of the prostate. (*b*) A more complete removal of the prostate, prostatic urethra, sheath of pelvic fascia, portion of the bladder base overlying the prostate, and seminal vesicles.

(*a*) *Perineal prostatectomy.*—I shall not give the details of this operation for I have recently described it.[3] I have operated upon two cases of malignant disease of the prostate by this method. One patient is well two months after the operation and the other in good health after six months. This method of removal is the most satisfactory of those described, for the prostate can be very thoroughly dissected out and the posterior and lateral parts of the sheath removed. But a study of the anatomical relation of the prostate to the bladder base and prostatic urethra will show how intimate is the connexion between the muscle of the bladder base and the urethral wall with that of the stroma of the gland, and how ill-defined are the limits of the glandular tissue of the organ. And it will be seen that any method which stops short of removing the prostatic urethra and the muscular floor of the bladder which overlies the prostate will court recurrence of the growth. For this reason the more extensive operation elaborated by Young of Baltimore[4] is a sounder proceeding. But this operation is a very formidable undertaking, and on this account something short of an ideal method may be preferable in some cases.

(*b*) *Total extirpation of the prostate, prostatic urethra, seminal vesicle and bladder base* (*Young's operation*).—I have recently discussed this operation and shall therefore content myself with the relation of a case which will illustrate the method and the after-state. A man, aged 70 years, came under my observation at St. Peter's Hospital with symptoms of prostatic disease of three weeks' duration. The prostate (Fig. 2) was enlarged, smooth, bilobed, stony hard, and fixed. There was half an ounce of residual urine. The general condition was good. I operated on August 20th, 1907. With a staff in the urethra a curved, anteriorly convex, pre-rectal incision was made and the apex of the prostate was exposed. The membranous urethra was opened longitudinally and a Young's tractor was introduced. The posterior aspect of the prostate was exposed and an unusual amount of bleeding followed the separation of the rectum from the prostate. The lateral surfaces of the prostate were freed, the levatores ani muscles being somewhat difficult to control. The tractor was now depressed and the urethra cut across at the apex of the prostate, together with the veins passing to the prostatic plexus. The prostate was now drawn backwards and a retractor which had controlled the rectum was changed from the posterior part of the wound and placed under the arch of the pubis. The anterior surface of the prostatic sheath could now be seen and a head lamp was necessary for the further dissection. The space of Retzius was opened up and gave access to the front of the prostate and the pubo-prostatic ligaments could be seen high up. The latter were detached with the finger and the junction of the anterior wall of the bladder with the base of the anterior surface of the prostate could be seen and the vertical veins of the bladder wall identified. The limit of the prostate was defined with the finger and a transverse incision was made with a scalpel through the bladder wall just above this. When this opened the bladder cavity the fluid contents escaped. The incision was extended on either side by means of curved scissors and the bladder surface of the prostate could be turned down into the wound. An incision was now made transversely through the mucous membrane and muscle of the bladder base in front of the ureteric openings and this was deepened by blunt dissection to the upper surface of the seminal vesicles. The further steps of the operation consist in dissecting out the vesicles and vasa deferentia. I did not define the latter structure and, cutting too freely, incautiously cut across the vesicles and had to dissect portions of them away after removing the prostatic mass. (Fig. 7.) The large aperture in the bladder base, which would easily admit a Tangerine orange, was stitched antero-posteriorly from behind forwards until an opening which would admit the forefinger was left at its anterior angle. The whole bladder was now readily pulled downwards by the free ends of the knotted sutures. The cut end of the prostatic urethra was freed and united to the opening in the bladder by catgut sutures, with the help of a gum-elastic catheter

FIG. 7.



Specimen of malignant prostate after removal, viewed from the front, catheter lying in prostatic urethra. A, Prostatic plexus of veins. B, Portion of right levator ani muscle. C, Mucous membrane and muscle of bladder base.

passed along the urethra into the bladder. The ends of these sutures were left long and brought out of the wound. Some packing which had controlled the venous bleeding on either side of the pelvis was now removed, the levatores ani and perineal muscles were brought together with catgut stitches, and the wound was drained. The catheter was tied in place.

The operation lasted one and a half hours and was well borne by the patient. The catheter was removed too soon by the house surgeon and the urine leaked by the perineum, and for a time it looked as if the whole wound would break down. The wound healed rapidly, however, and the patient left the hospital 29 days after the operation wearing a urinal.

It is now five months since the operation and the following is the patient's state (Jan. 29th, 1908). He is gaining weight and feels strong and well. Urine is passed four or five times during the day and three or four times at night. In the daytime when moving about he "weeps" a little, but the urine does not dribble away. He has discarded his urinal and finds that a cloth is sufficient to keep him dry. If he collects the escape in a urinal it amounts to half a wine-glassful for the whole day. At night he is completely continent and wears no protection. He wakes to pass urine three or four times, the warning sensation being a warmth and an aching in the perineum. There is no force in the stream and he must stand up to pass it. He passed one ounce of clear urine at my request and three ounces of urine were then withdrawn by catheter. Rectal examination showed a thick transverse ridge at the region of the bladder base due to scar tissue.

This is an operation for cases where the malignant disease has not spread beyond the limits of the prostate and it is the only one which holds out a strong probability of success. The operation depends upon early and accurate diagnosis and it rests with those who are in charge of such cases at the first onset of symptoms to see that a diagnosis is made.

[3] Ibid.
[4] Johns Hopkins Hospital Reports, vol. xiv., 1906.

A REPORT ON 50 CASES OF ANALGESIA BY THE INTRASPINAL INJECTION OF STOVAINE.[1]

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Of the many novel methods of modern surgery of comparatively recent introduction perhaps few have been so startling and so full of promise as the induction of analgesia by the intraspinal injection of various drugs. Few methods have placed in our hands so powerful a means of combating the great danger of administering general anæsthetics in the presence of certain cardiac and pulmonary affections. And yet in spite of the fact that in this country the method has been placed on a sound footing by Mr. A. E. J. Barker, who has been the pioneer of this branch of surgical progress, and that this surgeon has, after an extended trial, urged its wider adoption in current medical literature, comparatively few surgeons have thought it worth serious consideration. Recently its claims were advocated by Mr. H. P. Dean, Mr. C. A. Leedham-Green, Mr. E. Canny Ryall, and others,[2] and considerable difference of opinion prevailed as to the drug most suitable for the purpose. It is not my intention to enter into a discussion of the merits of stovaine, novocaine, tropacocaine, or other drugs, such experience as I have obtained being solely of the first mentioned; for I feel that the experience of one surgeon utilising the same drug in a number of cases is of more value than if that surgeon had experimented with three different drugs in the same number of cases. The cases here presented are published solely in order that they may swell the number already reported in this country, by which means alone a satisfactory estimate may be arrived at of the comparative value, or the reverse, of the method in question, as opposed to that of general anæsthesia and more particularly as regards chloroform.

It is interesting to consider first of all the objections that are raised to intraspinal analgesia by those who have not seen the method applied, or who are for various reasons obstinately opposed to its introduction. In my personal experience the chief of these has been that the spinal cord is bound to suffer in some mysterious way, either at the time of injection or at some later date. What particular form of disaster is anticipated is not clear, but it appears to concern the chance of paralysis of some unexplained origin, the pathology of which is, I find, not usually forthcoming on investigation.

Again, there are those who, Cassandra-like, harp on the great danger of septic infection of the spinal canal, extension of the analgesia to the centres of respiration and circulation, the uselessness of the method above the umbilicus, and who appear to have a rooted objection to the patient retaining consciousness during the operation. It is but natural that the skilled anæsthetist should look with disfavour upon a method which *appears* to threaten to supersede to a great extent the time-honoured science of which he has been an able exponent; and as in conversation with many well-known anæsthetists I have heard these objections repeatedly urged and have been asked to believe that ether is the one great harbour of refuge from the risks of chloroform, that there is no real necessity for the introduction of intraspinal analgesia, and that the whole thing is simply a passing fad imported from abroad, I feel bound to say in the first place that I do not for a moment believe that general anæsthesia is threatened with extinction, nor would I for one wish that it were; secondly, cases do occur in which any form of general anæsthesia is out of the question; thirdly, a skilled anæsthetist is not always available; and lastly, I can see no valid reason why the induction of intraspinal analgesia should not be in the hands of the skilled anæsthetist, provided he is fully versed in its technique and in the necessity for aseptic methods. In support of this last statement one has only to remember that although the analgesia provided by stovaine is usually ideal and of considerable duration, cases are met with in which the analgesia is insufficient or its level not sufficiently high. In these circumstances one is compelled to have recourse to a general anæsthetic, and therefore I prefer to consider intraspinal analgesia as *an addition to* the armamentarium of the skilled anæsthetist rather than as an encroachment upon his department.

Recently, following the excellent work of Mr. Barker which much impressed me, I commenced to employ the method in my own wards at the "Dreadnought" Hospital, and this report concerns the first 50 of these cases, for assistance in taking the notes of which I am much indebted to the resident staff of the hospital as well as to several of the post-graduate students in the London School of Clinical Medicine, and to all of whom my thanks are due. I may say that the method of intraspinal analgesia was not indicated in all of these cases, and therefore was only applied to those patients who willingly agreed to its application or who requested it in preference to general anæsthesia. Of these latter there soon was quite a number, the method rapidly becoming popular among the patients, who recounted their experiences to others in the wards. The solution employed was that prepared by M. Billon of Paris after Mr. Barker's formula,[3] and the latter's methods were closely followed; the doses, however, especially in the later cases, were kept as nearly uniform as possible for purposes of comparison. As I have for the sake of brevity and ease of comparison tabulated the whole of my cases it would be waste of time to consider them individually, and I will therefore only refer to those in which there is some point of interest bearing especially on the question of this method of inducing analgesia.

CASE 1.—This case was one of a gigantic inguino-scrotal hernia in a plethoric man, 62 years of age. It was necessary to attempt the cure of it by the implantation of a filigree of silver wire by the double-section method recently described by me.[4] The patient was found to be suffering from double aortic disease and it was considered unsafe to give him any form of general anæsthetic. The hernia was so large[5] that I feared that in this, my first case of analgesia by this method, the effect of the stovaine might not be sufficiently prolonged to permit of so extensive an operation as was necessary being completed under its influence. This, however, had to be risked, and accordingly six centigrammes of stovaine-glucose solution were injected in the middle line between the second and third lumbar spines. Analgesia was complete in eight minutes, rose to the level of the nipples, and lasted 30 minutes. In spite of the extensive nature of the operation, the whole of the sigmoid colon being adherent to the sac and requiring to be freed by dissection from it, no difficulty was experienced and the parts remained perfectly insensitive at the close of the operation. Ligature of the omentum was felt slightly as a tactile sensation, not as pain.

This case is typical of the class in which the method is genuinely indicated and shows a duration of analgesia which would suffice for most surgical procedures.

CASE 2.—This case was admirably illustrative of the influence of spinal analgesia in combating shock. The patient was admitted terribly mauled by having been caught by a pulley making 1700 revolutions per minute. Both feet were reduced to pulp by compound fracture dislocation; the base of the skull was fractured; the skin of the left side of the chest was so scored that eventually a patch of the size of a breakfast-plate sloughed out; and the sacrum was so badly bruised that three large bed-sores soon appeared. The patient was thought to be dying, but four days later he rallied and it was determined to amputate the right leg which had become gangrenous. The site of injection was just above the bed-sores and had to be very carefully cleansed. Six centigrammes of the solution were used and in seven minutes the operation was commenced, the limb being removed at the tubercle of the tibia. No pain whatever was felt and in spite of the very serious condition of the patient there was no sign of shock and he ultimately recovered.

Five months later it became necessary to remove the other foot for intractable pain and deformity (Case 35) as the patient was quite unable to bear the weight of his body on the anterior part of the foot. He again chose stovaine in preference to general anæsthesia and under its influence a Syme's amputation was performed. The injection was made through the same space as before without difficulty, the flow of fluid being as free as on the first occasion. No ill effects followed and the patient expressed himself as much in favour of the method of analgesia as compared with general anæsthesia, of which he had had previous experience.

CASE 4.—This was a case of oblique fracture of the tibia with marked displacement of the fragments. After injection the bone proved to be completely insensitive to drilling and a three-inch screw was used. The patient, who was a German, was much interested and chatted actively during the operation, which lasted nearly an hour.

CASE 6.—This was the first failure of the series. The flow of cerebro-spinal fluid was clear but very slow; no difficulty was experienced in the injection, but possibly some of the stovaine may have escaped into the extradural space. The knee-jerks disappeared and the legs became partially anæsthetic; the analgesia was, however, quite incomplete at the end of 12 minutes, and the operation, a radical operation for inguinal hernia, had to be done under general anæsthesia. No after-effect was apparent as the result of the combination of the two methods.

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[1] A post-graduate lecture delivered before the London School of Clinical Medicine.

[2] Meeting of the British Medical Association at Exeter, 1907, THE LANCET, August 10th, 1907, p. 378.

[3] Brit. Med. Jour., 1907.

[4] Transactions of the Clinical Society of London, 1907.

[5] This measured 25 inches in circumference and 15 inches in length.

CASE 15.—This was the second failure. It was a case of varicocele, and as in the former instance the flow of spinal fluid was very slow. The patient began to complain of pain as the veins were being divided, and although he said he could stand it and was unwilling to have an anæsthetic, he was obviously feeling it sharply and accordingly the operation was completed under ether.

CASE 18.—In this case the patient, a woman, 48 years of age, was the victim of a procidentia uteri of the most complete order and of bad chronic asthma. The operation (an original one and at present unpublished) involved the stripping of the peritoneal coat from the dorsal surface of the uterus. The analgesia lasted over three-quarters of an hour and was complete except that when the uterus was very forcibly dragged upon she complained of a pain in the chest (a symptom which I have noticed in one or two other cases when pulling on omentum or mesentery); she was, however, a very nervous patient and after the operation she said that she had really felt nothing of it. She felt no ill-effects whatever after the operation.

CASE 23.—Here the analgesia again failed completely. It was a case of inguinal hernia. Six centigrammes were injected, but the analgesia never rose higher than the scrotum and perineum and was not complete below that point. In this case, however, the flow of spinal fluid had been free. A general anæsthetic was given. There were no unpleasant after-effects.

CASE 26.—A woman was admitted for a recurrent attack of appendicitis. She was 36 years of age and healthy but extremely nervous, so much so that I hesitated to submit her to spinal injection; she, however, had a dread of chloroform or ether, and the operation was therefore done under stovaine. In 11 minutes the analgesia was complete to the ensiform cartilage, and with the exception that the patient complained of discomfort during the separating of some dense adhesions, which she referred to the epigastrium and for which a very few inhalations of chloroform were given, the method was perfectly satisfactory. She subsequently admitted that she had suffered no pain but had been a little nervous; she was never under the influence of the chloroform. Subsequently she was a little sick and her temperature was raised for two days.

CASE 29.—This patient was suffering from a very large popliteal aneurysm which threatened early rupture. He was also the victim of a commencing aneurysm in the arch of the aorta. The injection was made in the usual manner, six centigrammes being employed, the result being a complete and prolonged analgesia. The operation involved extensive dissection and handling of the popliteal nerves, but of this the patient felt nothing, tactile sensation even being in this case entirely abolished. It had been my intention to attempt to carry out Matas's operation of endo-aneurysmorrhaphy; the openings of the vessel into the sac proved, however, to be respectively on the anterior and on the posterior aspect, and therefore the old operation of Antyllus was done, about two pounds of clot being evacuated from the sac. The only after-effects consisted of slight headache, a temporary rise of temperature with a sensation of coldness but no rigors, and some aching of the back and loins, of which the patient made light. In spite of the severe handling of the popliteal nerves he made no complaint of subsequent pain, and is now perfectly sound.

CASE 33.—The patient was a man of 47 years of age, who was suffering from pulmonary tuberculosis with slight hæmoptysis and who had extensive caries of the tuber ischii with a large abscess in connexion with it in the right thigh. He was much wasted, and was not a suitable case for general anæsthesia. Six centigrammes of stovaine were used and produced a perfect analgesia to the level of the umbilicus. His condition on the table was excellent. The right tuber ischii was gouged away and the abscess laid open, scraped, and packed, the patient declaring himself perfectly comfortable. There were no subsequent complications in this case.

CASE 38.—In this case a man, aged 47 years, was admitted with acute retention of urine due to an impacted calculus in the urethra. He was in great pain and the stone was firmly gripped in the spongy portion of the urethra. Five centigrammes of stovaine gave complete analgesia to the umbilicus and the calculus was removed quite painlessly through a median perineal incision; it was of the size of a small cherry stone.

CASE 47.—I had occasion in this case to repeat the injection. The patient was a stout man, aged 42 years, with a very large vaginal hydrocele. The usual method was followed and six centigrammes of stovaine solution were injected, no difficulty being experienced in obtaining a good flow of cerebro-spinal fluid; in fact, the fluid came away almost as if under pressure. The fact that the knee-jerks were much exaggerated, as were also the plantar reflexes, and that he had a specific history may account for the complete absence of any result from the injection. After waiting nearly a quarter of an hour I injected a further dose of five centigrammes when gradually the analgesia established itself. It, however, only lasted a comparatively short time and was followed by no ill-effects.

CASE 50.—In this case also the injection was repeated owing to the short duration of the analgesia induced by the first puncture. The patient was a healthy man with a large inguinal hernia recurrent from an operation done abroad. The case was therefore treated by the implantation of a silver filigree. An injection of six centigrammes failed to give complete analgesia for longer than 20 minutes, although no difficulty had been found in making the injection; the patient was therefore turned over and a further dose of five centigrammes was given. Analgesia at once became complete and remained so for another 40 minutes. No ill-effects were noted and the patient declared himself well satisfied with the method.

I may say that the later cases in this series, with the exception of Case 49, have shown a distinct tendency to feeble analgesia, as have some of those recently treated and not included in this list. This may be due to the fact that M. Billon has ceased quite recently to manufacture the stovaine-glucose solution himself and has handed the work over to a firm; there may therefore be a difference in the strength of the new consignment from that originally prepared by M. Billon.

From a consideration of the cases detailed in this series I am tempted to record the impressions which I have gained independently of the method of intraspinal analgesia for the benefit of those who have not seen it put into practice; at the same time, it must be remembered that they are those of a beginner, and that although fewer failures may come with more experience the cases here reported are set forth as accurately as it has been possible to do, without any desire on my part to glorify the results obtained or to minimise the risks which time may possibly show the method to be attended by.

Remarks Bearing on the Performance of the Injection.

The difficulty of performing the injection has in none of the cases been serious; in one or two stout patients the second lumbar spine has not always been easy to define, but by arching the back to an extreme degree it can generally be recognised. In any case, if the injection happens to be made below or above this spine no great danger is likely to be run, but possibly the same cannot be said of injection at a higher level than the first lumbar spine. It will be noted that the second case of the series was injected in the first lumbar interspace in order to avoid the possible contamination of bed-sores. The direction of the needle I have found to vary much; as a rule it passes upwards and forwards, but in one or two cases injection has only been possible in a slightly downward direction. In nearly every case the cerebro-spinal fluid has been found at a depth of two to two and a quarter inches from the surface, this depth only being exceeded in very stout patients. If, therefore, a greater depth than this is reached in a thin subject when the needle is accurately inserted in the middle line and has not struck bone the failure to find fluid is probably due to a blunt point pushing the dura mater, which is comparatively tough, in front of it, or to the blocking of the cannula or needle with blood clot. In only one case did blood come freely from the needle after insertion. It did not vitiate the result of the injection nor was it followed by any ill effects.

The application of the ethyl chloride spray before the injection is made at once gets over the difficulty of the slight pain of the puncture, but this should not be carried too far for fear of hardening the skin to the extent of turning the point of the needle, in which case it may fail to enter the theca spinalis. In only one of the cases did the patient complain of the pain of the puncture. The spinal fluid not being easily found the needle was passed rather more deeply than usual when he suddenly complained of a sharp pain which he said shot from his back to his toes. This was probably due to one of the nerves of the cauda equina being touched. No ill result, however, followed.

The variation of the pressure of the cerebro-spinal fluid was throughout very noticeable. In some cases the fluid came from the needle as if under considerable pressure, while in a few cases, on the other hand, the flow was so slow as to result in a succession of drops. This was especially the condition present in two of the cases in which the analgesia failed.

I do not think that the sealing off of the puncture wound is a matter of great importance and it certainly involves some little delay in turning the patient upon his back and raising his head. There is not the least probability of infecting the spinal canal through this wound; if such a disaster should occur it must be solely due to the use of a dirty needle.

The prompt raising of the patient's head so that the foramen magnum shall be on a higher level than the dorsal curve of the spine is a matter to be very carefully supervised. This is, I think, shown by the fact that in Case 7, in which this duty was inadvertently carried out rather late, the analgesia rose to the level of the clavicles (the highest of the series), and the after-effects were seen in the occurrence of really bad headache, backache, and a tendency to rigors, although on the table the patient's condition was excellent. It is, I think, wise to keep the patient's head raised throughout the operation. Care should also be taken that the rest upon which the sacrum is raised in order to allow of the fluid injected gravitating towards the dorsal region of the spine is correctly placed and not allowed to slip, as it at times tends to do, towards the lumbar region; as in this case, a portion of the injected fluid may lie below the point of injection and only a small quantity reach a higher level. In perineal operations this is not a matter of great importance, the sacral nerves being those chiefly in question; but in operations on the groins, limbs, or abdomen it is fatal to the establishment of full analgesia. As soon as the analgesia is nearly complete this rest may be removed.

A Table in which are summarised the Details of, and the Results obtained in, Fifty

Case.	Description.	Sex.	Years of age.	Operation.	Flow of cerebro-spinal fluid.	Centigrammes of stovaine.	Reflexes gone.	Legs heavy.	Perineum and scrotum.	Feet and legs.	Thighs and groins.	Analgesia complete.	Duration.	Height of analgesia.
1	Plethoric with double aortic disease.	M.	62	Inguinal hernia; implantation of filigree.	Free.	6	At once.	2 min.	3 min.	3½ min.	5 min.	8 min.	80 min.	Nipple line.
2	Very ill; fracture of base of skull; crushed legs; gangrene of right toe. P. 140; T. 102° F.	M.	27	Amputation at tubercle of tibia.	,,	6	,,	,,	,,	3 ,,	4 ,,	7 ,,	56 ,,	Umbilicus.
3	Strong adult.	M.	35	Horseshoe fistula of anus.	Single drops.	4	,,	3 ,,	7 ,,	4 ,,	10 ,,	12 ,,	30 ,,	Iliac spines.
4	Healthy German.	M.	37	Screwing of fractured tibia.	Free.	6	1 min.	2 ,,	3 ,,	5 ,,	7 ,,	9 ,,	58 ,,	Umbilicus.
5	Healthy seaman.	M.	31	Inguinal hernia and varicocele.	,,	6	At once.	2 ,,	4 ,,	5 ,,	8 ,,	11 ,,	57 ,,	Costal margin.
6	Healthy adult.	M.	35	Inguinal hernia.	Very slow.	6	,,	5 ,,	Anæsthesia incomplete.					
7	Big plethoric and alcoholic seaman.	M.	43	Varicose veins of left leg and thigh.	Good.	6	,,	3 ,,	4 min.	6 min.	7 min.	9 min.	90 min.	Clavicles.
8	Thin but powerfully built Irishman.	M.	65	External urethrotomy.	,,	5	,,	5 ,,	8 ,,	7 ,,	9 ,,	12 ,,	35 ,,	Iliac crests.
9	Prematurely aged; arterio-sclerosis.	M.	60	,, ,,	,,	5	1 min.	1 ,,	3 ,,	4 ,,	5 ,,	5 ,,	50 ,,	Third rib.
10	Healthy German.	M.	30	Double vaginal hydrocele.	Free.	6	At once.	3 ,,	2 ,,	3 ,,	3 ,,	10 ,,	40 ,,	Nipple line.
11	Healthy negro.	M.	37	Inguinal hernia; implantation of filigree.	,,	6	1 min.	2 ,,	2 ,,	3 ,,	5 ,,	9 ,,	60 ,,	Umbilicus.
12	Spare built, with arterio-sclerosis.	M.	50	,, ,,	Slow.	6	At once.	1 ,,	2 ,,	5 ,,	4 ,,	11 ,,	58 ,,	
13	Healthy seaman.	M.	23	Varicocele.	Good.	5	,,	1 ,,	2 ,,	2 ,,	5 ,,	8 ,,	40 ,,	Inch below umbilicus.
14	Healthy seaman.	M.	24	Inguinal hernia.	Free.	6	,,	2 ,,	3 ,,	5 ,,	7 ,,	12 ,,	65 ,,	Costal margin.
15	Healthy seaman.	M.	35	Varicocele.	Very slow.	5	1 min.	5 ,,	Analgesia insufficiently high.					
16	Healthy seaman.	M.	24	Inguinal hernia.	Free.	6	At once.	2 ,,	2 min.	3 min.	5 min.	7 min.	48 min.	Umbilicus.
17	Phthisical Bengali.	M.	25	Excision of tuberculous testis.	,,	6	,,	3 ,,	2 ,,	4 ,,	6 ,,	10 ,,	57 ,,	Inch above umbilicus.
18	Spare woman; bad asthma and emphysema.	F.	48	Ventrofixation for complete procidentia uteri.	Good.	6	,,	3 ,,	5 ,,	4 ,,	6 ,,	9 ,,	80 ,,	Costal margin.
19	Healthy seaman.	M.	35	Inguinal hernia.	Free.	6	,,	2 ,,	3 ,,	5 ,,	6 ,,	7 ,,	50 ,,	Two inches above umbilicus.
20	Healthy seaman.	M.	27	,, ,,	Good.	6	1 min.	2 ,,	2 ,,	3 ,,	5 ,,	6 ,,	55 ,,	Third rib.
21	Healthy seaman; very nervous.	M.	42	,, ,,	Free.	6	2 ,,	3 ,,	8 ,,	6 ,,	8 ,,	10 ,,	45 ,,	Iliac crest.
22	Healthy seaman.	M.	28	,, ,,	,,	6	1 ,,	2 ,,	2 ,,	9 ,,	4 ,,	9 ,,	65 ,,	Ensiform cartilage.
23	Healthy seaman.	M.	43	Inguinal hernia and vaginal hydrocele.	,,	6	3 ,,	5 ,,	7 ,,	12 ,,	Analgesia failed to reach groins.			
24	Healthy seaman.	M.	35	Inguinal hernia.	,,	6	2 ,,	1 ,,	2 ,,	3 ,,	3 min.	5 min.	80 min.	Two inches below umbilicus.
25	Muscular Italian.	M.	32	Inguinal hernia, implantation of filigree.	,,	6	1 ,,	1 ,,	6 ,,	4 ,,	5 ,,	7 ,,	55 ,,	Ensiform cartilage.
26	Thin, rather nervous patient.	F.	36	Apendicectomy.	,,	6	At once.	2 ,,	4 ,,	5 ,,	7 ,,	11 ,,	48 ,,	,,
27	Strongly built seaman.	M.	25	Inguinal hernia.	Very free.	6	1 min.	1 ,,	2 ,,	3 ,,	3 ,,	6 ,,	55 ,,	Costal margin.

Cases in which Analgesia was brought about by the Intraspinal Injection of Stovaine.

Case.	Motion possible.	Condition during operation. (P. = pulse. R. = respiration.)	After-effects.	Shock.	Pyrexia. (T. = temperature.)	Remarks.	Opinion of the patient.
1	No.	Comfortable. Smoked a pipe. P. 120; R. 20.	Slight headache and vomiting, relieved by aspirin.	None.	T. 100°.	Hernia very large. Circumference, 25 inches. Length, 15 inches. Sigmoid adherent in all its length to sac. Felt ligation of the omentum slightly.	Much less unpleasant than chloroform.
2	,,	Slight nausea after 10 minutes, relieved by brandy. P. 110; R. 15.	Nausea, feeling of weight in limbs.	,,	T. 101·5°. (? Due to septic state.)	Injection made above second lumbar spine to avoid bedsores. Bone quite insensitive.	Much prefers it to ether.
3	In lines.	Excellent. P. and R. normal.	None.	,,	T. 99·8°.	Marked unilateral sweating of head after injection. Dilatation of sphincter was not felt.	Very favourable.
4	No.	Chatted actively and smoked. P. and R. normal.	,,	,,	T. 100·4°.	Bone completely insesitive.	Very decidedly favourable.
5	,,	Comfortable. P. 100; R 18.	Slight headache.	,,	No.	Spinal analgesia by own request.	Quite satisfied.
6	Yes.	—	—	—	—	Operation done under general anæsthesia. No symptoms referable to combination of methods.	—
7	No.	Slight nausea for five minutes; analgesia perfect.	Pain in both legs. Bad headache and backache; slight rigor.	None.	T. 101·2°.	Head was raised rather late after injection; aspirin relieved headache.	Did not like it. Refused to have other side done under any anæsthetic; never had chloroform.
8	Slight.	P. 108 and feeble; R. 15. Brandy; comfortable; analgesia perfect.	None.	,,	T. 99·5°.	Analgesia by own request; tactile sensation in deep urethra; no pain.	Very decidedly favourable.
9	No.	Pulse feeble, 118; R. 20. Slight nausea.	Slight headache.	,,	T. 100°.	Analgesia perfect; tactile sensation in deep urethra.	Very decidedly favourable.
10	,,	Excellent. P. and R. normal.	None.	,,	T. 101°.	Analgesia perfect; by own request.	Felt no pain whatever.
11	,,	Excellent.	,,	,,	No.	Complained of some discomfort in epigastrium during ligation of omentum.	Much prefers this to chloroform which he has had before.
12	,,	Excellent. Smoked a cigar. P. and R. normal.	,,	,,	,,	Analgesia by own request.	Very favourable.
13	,,	Excellent.	Tingling in legs; slight headache.	,,	,,	Analgesia by own request. Tactile sensation on ligation of veins.	Quite satisfied with the result.
14	Slight.	Very comfortable; chatting all the time.	Sharp pain in wound and aching in limbs relieved by aspirin.	,,	T. 100·8°.	Analgesia by own request and perfect.	Has never had general anæsthetic, but thinks he would rather have stovaine.
15	Yes.	—	—	—	—	Patient said he could stand the pain, but he was obviously suffering. General anæsthesia was substituted.	—
16	No.	P. 108 at first; afterwards normal. No nausea.	Some pain in chest and limbs.	None.	No.	Analgesia perfect.	Very pleased he had the new method.
17	Slight.	Excellent.	Slight headache and nausea.	,,	,,	Analgesia perfect.	Very satisfied.
18	Yes.	P. 110; later 80. Some nausea; rather nervous; felt epigastric discomfort on packing abdomen.	None referable to stovaine.	,,	T. 100°.	Got frightened towards end of operation. Asked for chloroform and then refused it after a short administration.	Thinks she was more frightened than hurt and would not mind it again.
19	No.	Excellent.	Headache, relieved by aspirin.	,,	T. 100°.	Analgesia perfect.	Very favourable.
20	Slight.	Slight rigor; feeling cold. P. and R. normal.	Rather bad headache; aspirin.	,,	T. 101·2°.	,,	Doubtful; but he has never had general anæsthesia.
21	No.	Lost his nerve and asked for chloroform, but afterwards refused it; P. 112.	None.	,,	T. 101°.	Analgesia good.	Unpleasant, but did not feel any pain.
22	,,	Slight nausea after ten minutes; P. and R. normal.	Aching in legs and slight headache.	,,	No.	Analgesia by own request, and perfect.	Very favourable.
23	—	—	—	—	—	—	—
24	No.	Good; feeling of emptiness in stomach.	Sharp pain in limbs and headache, both relieved by aspirin.	None.	T. 100·8°.	Analgesia perfect although not very high.	Would rather have the headache than be unconscious.
25	Slight.	Excellent. P. and R. normal.	None.	,,	No.	Analgesia perfect.	Quite comfortable.
26	No.	Good, but rather frightened at first. P. 102; R. 20.	A little sick after operation; no headache.	,,	T. 101 2°.	Good analgesia till operation nearly completed. Felt pulling on bowel and at this point a little chloroform was given.	Was more frightened than hurt; it did not really hurt at all.
27	,,	P. fell to 48. Head lowered without my knowledge. (Possible cause of after-effects.) Comfortable.	Severe pain in back and knees; vomiting for two hours; bad headache; flatulence.	,,	T. 100·8°.	Analgesia perfect.	Never had general anæsthesia, so cannot tell.

A Table in which are summarised the Details of, and the Results obtained in, Fifty Cases

Case.	Description.	Sex.	Years of age.	Operation.	Flow of cerebro-spinal fluid.	Centigrammes of stovaine.	Reflexes gone.	Legs heavy.	Perineum and scrotum.	Feet and legs.	Thighs and groins.	Analgesia complete.	Duration.	Height of analgesia.
28	Prematurely aged with arterio-sclerosis.	M.	50	Inguinal hernia.	Free.	6	2 min.	2 min.	4 min.	3 min.	7 min.	9 min.	40 min.	Umbilicus.
29	Bad senile arterio-sclerosis; aortic aneurysm.	M.	48	Antyllus's operation for popliteal aneurysm.	,,	6	1 ,,	2 ,,	5 ,,	3 ,,	7 ,,	12 ,,	85 ,,	Two inches above umbilicus.
30	Healthy seaman.	M.	44	Inguinal hernia; twice recurrent; implantation of filigree.	Slow.	6	At once.	2 ,,	2 ,,	3 ,,	3 ,,	6 ,,	40 ,,	One inch above umbilicus.
31	Healthy seaman.	M.	40	Inguinal hernia.	Very free.	6	2 min.	1 ,,	3 ,,	5 ,,	6 ,,	8 ,,	50 ,,	Umbilicus.
32	Healthy seaman.	M.	47	Subfascial abscess about ankle.	Free.	6	2 ,,	3 ,,	4 ,,	6 ,,	11 ,,	12 ,,	45 ,,	Costal margin.
33	Wasted patient with phthisis at right apex.	M.	47	Erosion of tuber ischii, secondary abscess in thigh.	,,	6	2 ,,	3 ,,	5 ,,	5 ,,	7 ,,	10 ,,	60 ,,	Umbilicus.
34	Healthy seaman.	M.	45	Femoral hernia.	Very free.	6	At once.	1 ,,	3 ,,	4 ,,	7 ,,	9 ,,	50 ,,	Inch above umbilicus.
35	Same patient as Case 2 now in good health.	M.	27	Syme's amputation.	Free.	6	,,	2 ,,	2 ,,	4 ,,	3 ,,	12 ,,	48 ,,	Umbilicus.
36	Spare anæmic lad with acne and comedones.	M.	24	Double congenital inguinal hernia.	,,	6	2 min.	1 ,,	3 ,,	6 ,,	8 ,,	9 ,,	55 ,,	Inch below umbilicus.
37	Healthy seaman.	M.	34	Varicose veins.	,,	6	At once.	4 ,,	3 ,,	6 ,,	7 ,,	9 ,,	65 ,,	Ensiform cartilage.
38	Healthy seaman.	M.	50	Excision of a urethral calculus and hæmorrhoids.	,,	5	2 min.	3 ,,	6 ,,	7 ,,	9 ,,	10 ,,	35 ,,	Two inches below umbilicus.
39	Healthy seaman.	M.	45	Inguinal hernia.	,,	6	At once.	3 ,,	1 ,,	4 ,,	5 ,,	6 ,,	50 ,,	Costal margin.
40	Healthy seaman.	M.	42	Varicose veins.	Slow.	6	1 min.	2 ,,	2 ,,	4 ,,	5 ,,	5 ,,	50 ,,	,,
41	Seaman; alcoholic and muscular.	M.	40	Recurrent inguinal hernia. Implantation of filigree.	Free.	6	1 ,,	2 ,,	2 ,,	5 ,,	6 ,,	10 ,,	60 ,,	,,
42	Plethoric but otherwise healthy.	M.	48	Exploration of iliac tumour. Extraperitoneal.	,,	6	1 ,,	4 ,,	1½ ,,	4 ,,	5 ,,	7 ,,	40 ,,	Ensiform. cartilage.
43	Healthy seaman.	M.	34	Varicose veins.	,,	6	1 ,,	2 ,,	3 ,,	4 ,,	4½ ,,	5 ,,	65 ,,	,,
44	Same patient as Case 42.	M.	48	Laparotomy.	,,	6	1 ,,	1 ,,	1½ ,,	3 ,,	3 ,,	4 ,,	—	Umbilicus.
45	Healthy patient.	M.	30	Excision of callus from tibia and fibula.	Single drops.	6	½ ,,	1 ,,	2 ,,	7 ,,	4 ,,	8 ,,	60 min.	,,
46	Same patient as Case 37.	M.	34	Varicose veins.	Free.	6	1 ,,	1 ,,	2 ,,	4 ,,	4 ,,	8 ,,	35 ,,	Costal margin.
47	Healthy seaman.	M.	42	Large vaginal hydrocele.	Very free.	6	No result whatever.							—
	13 minutes later second injection given.				Free.	5	2 min	3 min.	5 min.	6 min.	10 min.	12 min.	30 min.	Two inches above umbilicus.
48	Thin patient with tight stricture.	M.	34	Catheterisation.	,,	4	2½ ,,	,	7 ,	6 ,,	8 ,,	10 ,,	30 ,,	Two inches below umbilicus.
49	Wasted patient with bad stricture and many old false passages.	M.	45	External urethrotomy. (Wheelhouse.)	,,	6	7 ,,	4 ,,	6 ,,	7 ,,	8 ,,	9 ,,	60 ,,	Umbilicus.
50	Healthy seaman.	M.	—	Inguinal hernia. Implantation of filigree.	Free.	6	2 ,,	3 ,,	5 ,,	6 ,,	7 ,,	10 ,,	20 ,,	Iliac crest.
	Second injection given.				—	5	—	—	—	—	—	—	40 ,,	Ensiform cartilage.

...in which Analgesia was brought about by the Intraspinal Injection of Stovaine—continued.

Case.	Motion possible.	Condition during operation. (P. = pulse. R. = respiration).	After-effects.	Shock.	Pyrexia. (T. = temperature).	Remarks.	Opinion of the patient.
28	No.	Excellent. P. dropped to 54 but no nausea. R. 18.	Flatulence only.	None.	T. 100·2°.	Analgesia perfect.	Very favourable.
29	,,	Excellent. P. 96; R. 18 Talking all the time.	Slight headache and backache.	,,	T. 100·5°.	Analgesia perfect, although popliteal nerves dissected out and held aside.	Very comfortable all the time.
30	Slight.	Excellent for 40 minutes when patient complained of pain. Chloroform given to finish.	—	,,	No.	This injection was undoubtedly successfully made as shown by height and completeness of analgesia.	Thinks he could have stood pain; felt nothing at all for first 40 minutes.
31	No.	P. rose to 132 soon after injection. Later it fell to 120, and was normal at end. R. 18 to 21; felt cold.	Next morning flatulence, headache, and pain in the knees.	,,	T. 99°.	Analgesia perfect.	Very favourable.
32	,,	Felt sick soon after injection. Slight tactile sensation retained.	Headache and flatulence; no pains.	,,	T. 100°.	,, ,,	,, ,,
33	,,	Excellent. P. 126; R. 18.	None.	,,	No.	,, ,,	Never felt anything at all and was quite comfortable.
34	,,	Slight nausea after ten minutes. Relieved by brandy. P. 100; R. 17.	,,	,,	,,	Analgesia perfect. Large mass of omentum ligated and removed painlessly.	Perfectly comfortable after nausea passed off.
35	Slight.	Excellent. P. and R. normal.	Very slight headache. Some pain in stump.	,,	T. 99 8°.	Second time he has had stovaine. Requested it again on this occasion. Injection made through old puncture mark.	Very comfortable; thinks he felt tingling in the back during sawing of tibia, but no pain at all.
36	No.	Excellent. P. and R. normal. Slight nausea for a short time.	None.	,,	No.	Analgesia perfect. Both sides operated upon.	Felt no pain whatever.
37	Slight.	Excellent. T. and R. normal.	Slight backache.	,,	T. 100°.	Analgesia perfect.	Felt neither pain nor discomfort.
38	No.	Excellent.	Rigor on returning to ward. Headache, backache, pain in limbs, all relieved by aspirin.	,,	T. 100°.	Tactile sensation in deep urethra where calculus was impacted. No pain.	Very pleased; was in great pain, which left him almost as soon as he was pricked in the back.
39	Slight.	Excellent.	None.	,,	No.	Analgesia perfect.	Never had chloroform, but this was quite painless.
40	,,	Slight nausea. T. and P. normal.	Backache and slight headache.	,,	,,	,, ,,	Quite comfortable.
41	Yes.	Excellent.	Headache.	,,	T. 99°.	,, ,,	Never felt anything.
42	No.	Nausea 10 minutes after injection.	None.	,,	No.	Tactile sensation retained; fourth and fifth fingers felt numb.	Quite comfortable after nausea passed off.
43	,,	Good. P. 101; R. 8–10.	,,	,,	,,	Analgesia perfect. Complained of difficulty of speech during operation.	Felt nothing of the operation.
44	—	—	,,	,,	,,	Given in this case to lessen the shock of possible colectomy. Condition, however, proved inoperable. Operation done under chloroform.	—
45	No.	Slight headache. P. 92; R. 12. Felt "pins and needles" in legs; otherwise good.	,,	,,	,,	Felt nothing of chiselling and drilling of bones.	Much prefers it to ether.
46	,,	Excellent. P. 76; R. 13.	Backache.	,,	T. 100·2°.	Second occasion of spinal analgesia. At his own request.	Quite comfortable all the time.
47	—	—	—	—	—	—	—
	Slight.	Tactile sensation in legs. Excellent. P. and R. normal.	Backache slight.	None.	T. 100°.	Patient had very exaggerated reflexes and ankle clonus slightly. Cause of failure of first injection not apparent. Testis.	Felt no ill effects except backache.
48	Yes.	Good, but nervous. P. 130–150; R. 20–22.	,,	,,	No.	Deep urethra quite insensitive in this case.	Did not feel anything.
49	,	Excellent. P. 100; R. 20–24.	None.	,,	,,	As at end of an hour track of urethra had not been found, general anæsthesia was given and catheter passed from bladder.	Was quite comfortable in his wound but felt cramped in lithotomy position.
50	No.	Excellent. P. and R. normal.	,,	,,	—	Analgesia provided by first injection only lasted 25 minutes. The second injection provided another 40 minutes, or 65 minutes in all.	Felt no pain at all.
	—	—	—	—	—		—

A little practice soon educates one's sense of touch to the extent of knowing the depth to which the needle has penetrated, the sensation of entering and leaving the ligamentum subflavum, of being in the extradural space, and of puncturing the dura mater being soon acquired and giving a great sense of confidence in one's manipulations.

Points of Interest regarding the Analgesia.

The most striking fact noticeable in this method is the tendency to variation exhibited in different cases as regards height, areas involved, duration and after-effects of the analgesia, even when the dosage remains constant, and the temperament and physique of the patients are comparable. As will be seen from a perusal of the accompanying table, the analgesia produced by a dose of six centigrammes of stovaine administered to patients of approximately the same class and age, varied in height from the knees to the clavicles; while in some cases no after-effects were noticeable, in others headache, nausea, backache, moderate pyrexia, and in one case slight rigors were met with. That these after-effects may be due to rapidity of absorption is possible; they probably have no connexion with the rapidity nor with the completeness of the analgesia, since these are the result of local contact with the sensory nerve roots and do not depend on absorption. Moreover, the severity of the after-effects does not always depend on the height of the analgesia, although in one case (Case 7) it would appear to have done so. In this case, in which the great height of the analgesia led one to be a little anxious as to its effect on the respiration and circulation, the patient's condition remained excellent on the table, his pulse and breathing appearing to be less affected than in several cases in which the analgesia stopped at a very much lower level. In spite of this variation it is possible to give approximately the order of events ensuing on injection, although the time at which these events occur varies in different cases.

The earliest and most constant phenomenon is the absolute abolition of all superficial and deep reflexes; usually within one minute the plantar, cremasteric, and patellar reflexes are all unobtainable. Following this the muscular sense gradually goes, the patient feeling his legs excessively heavy on an attempt to raise them, and in a few minutes, usually from two to three, the feet and legs are completely paralysed. It is noticeable here that the power to slightly flex and extend the toes remains. About the same time the perineum and scrotum become insensitive and these parts can usually be operated upon much earlier than the limbs and groins, the analgesia completely affecting the deep urethra and testis. The effect on the lower extremities is usually first seen on the peroneal aspect of the side upon which the patient was lying at the time of injection. By the time the lower part of the thighs has been reached the groins will usually be found quite insensitive and suitable for hernial and other operations, and by the time the upper part of the thighs has become analgesic the condition will generally have spread to the umbilical region, and in some cases even to the costal margin, the ensiform cartilage, or the nipples.

Not uncommonly tactile sensation remains to a blunted degree although sensation of pain is absolutely abolished; and in most cases there is an inability to distinguish the application to the skin of hot lotions from ether or ice, both conveying the sensation of tepid water.

The demarcation of the upper limit of the analgesia is usually very marked; half an inch higher or lower often leading from a normally sensitive area to one of analgesia. As regards the tissues themselves, all of them seem to become equally affected, with perhaps the exception to a slight extent of the peritoneum, omentum, and mesentery. Although these in most cases follow the rule of complete analgesia, cases occur now and then in which, although no actual pain results from their manipulation, ligation or dragging upon them appears to produce a sensation of dull aching in the chest and some nausea, which passes off, however, as soon as the manipulation ceases. Contrary to what one would expect to find, the two most sensitive tissues—the skin and the bone—appear to enjoy the most perfect analgesia, amputation and screwing being quite painlessly performed. Mr. Barker has drawn attention to the complete relaxation of muscles obtained by intraspinal analgesia and this has also been my experience. I have found it much easier to approximate the conjoined tendon to Poupart's ligament in closing the inguinal canal by Bassini's method under the influence of stovaine than by the aid even of chloroform.

The failure of analgesia which occasionally occurs is difficult of explanation except on three theories—viz., inefficient injection, only a portion of the dose reaching the spinal theca; natural insusceptibility of the patient; and inefficiency of the drug, due either to accidents during its preparation, its deterioration from keeping, or its contamination with other solutions in the operating theatre. I prefer to think that my failures are due to one of the two first-mentioned causes, first, because as I have already said I look upon my efforts rather as those of a beginner, and secondly, because the drug was freshly prepared to order. At the same time no difficulty was experienced in injecting these cases, and presumably insusceptibility to stovaine is as probable as to many other drugs. The possibility of one's syringe and needles being tainted with soda solution must be allowed, although in these cases the greatest care was taken to avoid any contamination of this sort. The effect of the drug on the circulation is seen in most cases in acceleration of the pulse, and in some few others in diminution of its force, while in the case of the respiration the rhythm is little altered, but there is generally a tendency to sighing from time to time shortly after injection; this does not apparently arise from any discomfort nor feeling of weakness.

The return of sensation to the parts rendered analgesic will usually be found to take place in the reverse order to that in which the analgesia was established, the abdomen first becoming sensitive, then the thighs, after which the legs and perineum, and lastly, the feet; the reflexes return last of all. The rapidity of this return varies considerably; in some cases it has been difficult to say exactly in what order the various parts regained sensation, the whole of the analgesia appearing to pass off simultaneously. Sensation, however, invariably returns before motion, and the return of the latter is often accompanied by a feeling of weight, dull aching, or tingling in the limbs like "needles and pins," or a feeling of stiffness, all of which pass off in the course of an hour or so. I have not seen any case in which the power of the bladder or rectum was affected.

Are the After-effects Worse than those of General Anæsthesia?

It is a little difficult to draw comparisons between these when well marked and the after-effects of chloroform, ether, &c., since the chief effect of stovaine is seen in headache and backache, whereas that of general anæsthesia consists of vomiting. I think the majority of us would prefer the comparatively short-lived discomfort of the former to the physical suffering and unpleasantness of the latter, especially when unduly prolonged. The difficulty of combating the sickness of general anæsthesia is well known and at times nothing seems to affect it. On the other hand, the pain and headache of stovaine analgesia will be found to be readily controlled by aspirin in doses of from 10 to 15 grains. In most of my cases the after-effects have been so trivial as not to merit serious consideration. I think that the fact that in every case in which a patient has had experience of both methods opinion has been unqualifiedly in favour of spinal analgesia is sufficient evidence that the after-effects of stovaine are preferable to those of chloroform or ether. A further testimony is afforded by the fact already referred to that many of my patients requested spinal analgesia on the advice of those who had already had it, and that the only three patients requiring a second operation again chose the method in preference to general anæsthesia. If among the after-effects we have to include certain cases reported from the continent as having terminated fatally or in which there was more or less permanent paralysis, I am bound to say that I know of no case in which such an accident has occurred in *this* country or when carried out according to Mr. Barker's directions. I believe the cause, if these cases have been accurately reported, must be sought in the combination of other drugs, and especially of adrenalin with the stovaine. This drug, which has been used abroad, with the intention of prolonging the analgesia, is to my mind an extremely dangerous addition to the solution, since its action depends on the temporary avascularisation of the spinal cord. It is in the highest degree probable that the anæmia of the cord produced by the action of adrenalin, if unduly prolonged, is capable of bringing about the death of the cells of the anterior and posterior cornua with a resulting degeneration of the nerves in connexion with them. But this is a matter which might well occupy the attention of the physiologists.

A Consideration of the Chief Advantages of the Method.

The complete abolition of the phenomena of shock is undoubtedly one of the greatest triumphs of spinal analgesia and has already been referred to in Case 2 of my series. For an explanation of this great result I would refer the student to Cushing's work on the cocainisation of nerve trunks.[6] This surgeon found that the preliminary injection of the great nerve trunks of the body before any operation upon the area governed by them completely abolished the phenomena in question. Intraspinal analgesia is simply another method of applying the operation advocated by Cushing, the sensory impressions resulting in shock being blocked at the posterior nerve roots instead of in the course of the nerve trunks.

The second great result of this method is that it has placed in our hands the means of bringing to operation in comparative safety many cases in which general anæsthesia would have been attended by very considerable danger from such complications as fatty and fibroid degeneration of the heart, double aortic and mitral disease, aneurysm, goitre, chronic bronchitis, and extreme nervous dread of anæsthesia.

The above are not, however, the only merits which the method can claim. The saving of time due to the rapidity of the analgesia, and the possibility of commencing in safety the antiseptic cleansing of the seat of operation during the progress of the analgesia, as well as the fact that no risk is run by radically altering the position of the patient on the table during the operation—such, for example, as rolling him over on to his face—are points of great importance. The necessity for preliminary and post-operative starvation, and the loss of appetite consequent on sickness and the unpleasant taste of ether in the mouth are entirely avoided by the use of spinal analgesia, and the patient can be fed, and brandy, &c., administered even in the course of operation, often a matter of great assistance in old and feeble patients.

The idea that there is a great disadvantage in the fact that the patient retains consciousness throughout the operation and is aware of all that is said and done is to my mind an erroneous one. I think that every surgeon of experience will admit that occasions arise from time to time, especially in abdominal gynæcology, in which it is advisable to obtain from the patient during the operation consent to some change in the method of procedure, the possible necessity for which has not been considered before the anæsthetic was administered. In the case of general anæsthesia either the surgeon must bear the responsibility for that procedure, or the patient must be sent back with the operation incomplete, to await a second operation when his or her consent shall have been obtained. Several such cases occur to my mind both in my own practice and in that of other surgeons, but considerations of space prohibit their quotation here. It is often of the greatest value to be able to question a patient during operation, and spinal analgesia permits of this. Should it be desirable to prevent the patient hearing the clatter of instruments, the sawing of bone, or the remarks of the operator or his assistants, the matter is easily accomplished by the use of plugs of wet cotton-wool or soft paraffin wax. As to the witnessing of unpleasant sights, nothing is simpler than a well-arranged screen across the patient's chest or a handkerchief tied across the eyes, at least one of which methods, preferably the former, is, of course, the usual practice.

Again, the advantage that the patient can at once be seen by his friends after the operation and engage in intelligent conversation with them is obvious.

Lastly, from the surgeon's point of view, the great danger is entirely obviated of strain being put upon abdominal sutures by retching, or upon the sutures of a Bassini's operation for hernia by the unconscious and often forcible extension of the hip-joint and other uncontrollable movements; and in the latter case certainly one of the chief predisposing causes of early recurrence is removed by the employment of spinal analgesia.

Cases in which the Sphere of Utility of the Method is Limited.

It must not, however, be supposed from what I have said that the method is in all points ideal; it certainly has its limitations, and I have already drawn attention to its tendency to variation and its occasional unreliability. Although I hold women to be commonly more courageous than men in the face of surgical procedures, it will at times be found that in extremely nervous women it is difficult to be certain when analgesia is really complete, so unwilling are they to acknowledge a condition which they fear may be only skin deep and may possibly pass off suddenly and leave them in great pain. Occasionally towards the end of their trial their courage may fail them and a general anæsthetic may be requested where none is really necessary.

The greatest disadvantage to my mind of spinal analgesia is met with when dealing with perineal conditions in women. Although the method is almost ideal for operations in this region in particular, the assumption of the lithotomy position is naturally an almost insuperable bar to its employment in private and (though to a less degree) in hospital practice. Even the lateral position would, I fancy, be little less offensive to the majority of women. In these cases there is no doubt that general anæsthesia is a *sine quâ non* from the patient's point of view, whatever the surgeon may think.

I have been asked frequently if a second injection is permissible in the event of failure of the analgesia, or where it does not last sufficiently long. Personally I have only recently attempted it and, as shown in Cases 47 and 50, the result was perfectly satisfactory and was followed by no ill-effects. There may, however, have been some doubt as to the stovaine having reached the spinal canal in the first of these cases, although I do not think so; there certainly was no doubt about the second. I can see no valid reason why it should not be done if the dose be carefully moderated; there is, however, an obvious objection from the point of view of asepsis as regards the operation, since it entails the rolling over of the patient and the displacement of all towels, &c., in order to carry out the injection.

Although the analgesia may in some cases rise as high as the umbilicus, in the present state of our knowledge the method must be regarded as unsuited to operations at a higher level than this and in many cases even at this point, for although such operations as those for umbilical hernise of moderate dimensions might be commenced under its influence, it must be remembered that this region is the first to which sensation returns and therefore the duration of the analgesia cannot be so long as in parts at a lower level. For extensive operations here, involving the implantation of large filigrees of silver wire, it is at present quite unsuitable.

In the presence of bed-sores or ulcers occupying the neighbourhood of the second lumbar interspace the injection might be impossible and certainly is unsafe.

It remains to be proved that it is unsafe to insert the needle at a higher level than this space, and in cases in which the indication for spinal analgesia is imperative I should not hesitate to attempt it; but no doubt should exist in the mind of the surgeon as to the extreme care with which this step should be carried out, for although the cord itself runs no danger from the needle at the level of the second or third lumbar interspace the same cannot be said of injections at a higher level.

As far as I know, the method has not been put to serious test in children and the cases in which it might be called for in them must be very few. Recently I applied the method with perfect success in the cases of two boys, aged 14 and 16 years respectively, using a single dose of four centigrammes in each case.

Conclusions.

From a study of my cases and of those of other surgeons I am convinced that in spinal analgesia a method of the greatest value has been devised; I believe that in careful hands and with the particular stovaine solution employed by Mr. Barker it is a perfectly safe proceeding. The opinion of patients as to its merits is universally favourable and the after-effects of the drug are really trivial in the majority of cases, while in the remainder they bear comparison very favourably with those of the various general anæsthetics. The analgesia provided is, as a rule, of the most perfect order, available to all operations within the area involved. The excessive rapidity of the pulse noticed in some of the cases subsequently to injection has probably nothing to do with the drug itself; it is amply accounted for by the excitement of the patient, and it will be seen that it rapidly subsides on the discovery that the operation is really painless.

With regard to the frequent occurrence of tympanites, it is clearly explicable on the supposition that the rami communicantes of the sympathetic system of nerves are equally affected by the injection, the bowels becoming for the time being partially paralysed.

There can, I think, be no doubt that the effect of the drug

[6] Annals of Surgery, 1902.

is not exerted upon the spinal cord itself, but upon the posterior, and to some extent upon the anterior, nerve roots.

What the maximum dose may be has yet to be proved; as will be noted 11 centigrammes were given in Case 50 without any ill-effects; but there must be few cases in which six or eight centigrammes will not suffice for all ordinary surgical requirements.

In view of the recent high death-rate from choloroform in certain quarters, I cannot help thinking that if the method of intraspinal analgesia had been more extensively employed and some of these cases submitted to operation under its influence such mortality would have been avoided. Finally, I would urge upon all anæsthetists the desirability of learning and adopting the method, not only for the sake of their patients but for their own professional welfare.

Summary of Cases of Intraspinal Analgesia.

Number of cases submitted to injection	50
Oldest patient	62 years.
Youngest	24 ,,
Largest single dose	6 centigrammes.
,, double ,,	11* ,,
Smallest dose	4 ,,
Greatest height of analgesia	To the clavicles.
Shortest interval between injection and operation	4 minutes.
Longest duration of analgesia	90 ,,
Average duration	51 ,,
Shortest analgesia in any completed operation	30 ,,
Number of cases in which analgesia rose to, or above the umbilicus	38 = 76 per cent.
Highest temperature due to stovaine after operation	101 2° F.
Number of failures to obtain sufficient analgesia †	3 = 6 per cent.

* I.e., 6 + 5.

† It must be remembered here that these cases were not submitted to a second dose, which, as in Cases 47 and 50, would probably have produced the desired amount of analgesia.

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RENAL HÆMORRHAGE IN CHRONIC INTERSTITIAL NEPHRITIS.

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IN the early part of the last century cases in which hæmaturia appeared without any symptoms gave rise to considerable speculation. Little was known as to their explanation and they were spoken of as cases of "hæmaturia sine materia," "renal hæmophilia," or even "hæmaturia from a healthy kidney."[1] As time passed certain obvious changes were found associated with this condition and these were considered to explain all such cases. They were then supposed to be due to new growths, stone, or tubercle. It was not until the end of the century, when the cystoscope (a great aid to our powers of diagnosis) came into use and advancing surgical skill justified the exploration of many of these obscure cases, that the group of unexplained hæmaturias again became prominent. To this group belong many of the cases which I propose to consider. By the term "chronic interstitial nephritis" I wish to indicate the condition also known as granular kidney, chronic Bright's disease, or cirrhosis of the kidneys as distinguished from a purely local nephritis due to some definitely local cause, such as an obstruction to one ureter or an inflammation ascending from the lower urinary tract. In granular kidney there is a widespread deterioration of the arteries and arterioles; there is also an increase of the arterial tension; thus it is not surprising to find that spontaneous hæmorrhages occur in many parts of the body. Dr. Samuel West[2] quotes statistics showing that from 15 per cent. to 75 per cent. of cases of granular kidney die from cerebral hæmorrhage; epistaxis is very common and may be the first symptom of the disease; while retinal hæmorrhages are of great value in its diagnosis. Many of these hæmorrhages occur late when the blood tension is markedly raised and the vessel walls are much weakened; these, then, are due to mechanical causes; others, such as epistaxis and (as I hope to show) hæmaturia, may take place at a stage when such gross changes are not marked, and may perhaps be due to some toxic process causing a local infiltration. The hæmaturia of granular kidney has not attracted so much attention as the other forms of bleeding, but it is by no means rare.

Sir George Johnson[3] first drew attention to this condition and regarded it as occurring in an "advanced stage." He considered that the blood came from the bladder and the pelvis of the kidney, rather than from the kidney itself, because it was unusual to find blood-casts of the tubes. The amount of blood lost during any one attack is, as a rule, small; but traces of blood may be found in the urine over long periods. The subject is dismissed very shortly in text-books; thus Sir W. Roberts[4] speaks of the hæmorrhage as "generally insignificant," and Professor W. Osler[5] merely says "there may even be hæmaturia." In 1885 Dr. West[6] published three cases showing that the bleeding might be quite severe; he considered it to be "vesical in origin, as, in the absence of acute nephritis, the urine was rarely smoky or dark in colour." Two years later Mr. A. A. Bowlby[7] described cases of "Profuse Hæmaturia in connexion with Granular Kidney," in which it was proved post mortem that the blood had come from the kidneys. These cases, however, were complicated by urethral obstruction, in one by an enlarged prostate, and in the other by stricture of the urethra. The *profuse* bleeding was probably induced by instrumentation. In the first case the patient had retention of urine, which was relieved by catheterisation. Mr. E. Hurry Fenwick[8] states that the sudden removal of much residual urine from such a case, in which the ureters and renal pelves are dilated, often causes dangerous hæmorrhage; "the intertubular vessels, and those in the mucous membrane of the conducting channels, being suddenly robbed of a support to which they had been accustomed, rupture; and blood escapes freely into the bladder." Mr. Fenwick also gives evidence to show that in the second case the bleeding was very probably due to irritation of the stricture, causing a "reflex hyperæmia" of the kidneys. Such cases I do not propose to consider, as they appear to be of a different nature to those in which there are no back-pressure changes. In 1889[9] and 1893[10] Mr. Fenwick drew attention to the hæmaturia of chronic Bright's disease: he considered it to be by no means uncommon, and stated that about 12 per cent. of the obscure cases of hæmaturia sent to him for cystoscopy belonged to this group. In 1892 Mr. C. W. Mansell Moullin[11] recorded a case of severe renal colic, associated with hæmaturia, in which a diagnosis of renal calculus was made; on exploration no stone could be found and post mortem, ten days later, nothing was found save granular kidneys.

In 1900 Dr. West,[12] writing about hæmaturia in his work on Granular Kidney, stated that it had often led to mistakes in diagnosis and quoted several cases. He considers copious hæmorrhage rare, but has known mild bleeding to persist for long periods. About this time Dr. G. M. Edebohls[13] published several papers concerning the surgical treatment of chronic renal disease, especially by decapsulation of the kidneys, but he did not devote any attention to hæmaturia. Mr. Fenwick in 1904[14] again wrote of this symptom in granular kidney and regarded it as occurring early in the disease before the advent of noticeable cardio-vascular or retinal changes, the clue to the cause of the bleeding being given by the urine which is of low specific gravity and contains a faint trace of albumin with tube casts. In March of last year a paper on the Hæmaturia of Chronic Nephritis by Dr. Arthur L. Chute of Boston[15] appeared in the *American Journal of Urology* but most of his cases appear to belong to the infected and obstructed groups with which we are not concerned; he lays stress on the importance of separating cases of hæmaturia due to Bright's disease from those in

[1] Rovsing: Brit. Med. Jour., 1898, vol. ii., p. 1547.

[2] S. West: On Granular Kidney and Physiological Albuminuria, 1900, p. 98.

[3] Sir George Johnson: Medical Lectures and Essays, p. 747, quoted by Mr. E. H. Fenwick.

[4] Sir W. Roberts: Renal Diseases, fourth edition, p. 144, quoted by Mr. Fenwick.

[5] W. Osler: The Principles and Practice of Medicine, fourth edition, p. 860.

[6] S. West: THE LANCET, July 18th, 1885, p. 104.

[7] A. A. Bowlby; Transactions of the Clinical Society, 1887, vol. xx., p. 147.

[8] E. H. Fenwick: The Cardinal Symptoms of Urinary Disease, 1893, p. 44.

[9] E. H. Fenwick: The Electric Illumination of the Bladder and Urethra, 1889.

[10] The Cardinal Symptoms of Urinary Disease.

[11] C. W. Mansell Moullin: Transactions of the Clinical Society, vol. xxv., 1892, p. 56.

[12] On Granular Kidney, p. 103.

[13] G. M. Edebohls: The Surgical Treatment of Bright's Disease, 1904.

[14] E. H. Fenwick: A Handbook of Clinical Cystoscopy, p. 381.

[15] Arthur L. Chute: American Journal of Urology, No. 3, vol. iii., 1907, p. 89.

which nephrectomy is required but is inclined to advise surgical treatment, such as decapsulation, for these also.

On looking through the London Hospital records for the last 15 years I have been able to collect 31 cases of hæmaturia occurring in what was regarded as chronic interstitial nephritis; in none of these cases could any other cause for the hæmorrhage be found, the urine was always of a low specific gravity—that is to say, about 1010—and contained granular or hyaline casts, or both; in some there were many other signs of granular kidney, in others these appeared later, while in many no further signs of disease could be discovered. To these I have added 14 cases collected from the literature. On examining the hospital notes I find that in the last year or two the heading "hæmaturia, ? cause" has been less often used and granular kidney is more often put down as the cause, this form of hæmaturia having received very little attention until lately. Some cases I selected had been recorded as ? acute or subacute nephritis, occurring in the course of granular kidney, and my reasons for including these are given lower down. On the surgical side I found six cases, all of which have been in the hospital within the last five years, none being recorded in any of the ten preceding ones, a fact which shows how recently these cases have come under the notice of the surgeon. In the course of my search I noticed a considerable number of cases of slight hæmaturia occurring in young persons, mostly under 21 years of age, who, after being elaborately overhauled as hospital in-patients, were yet discharged as "hæmaturia ? cause." A few of them returned later, to enter my group of chronic interstitial nephritis, but many have not been heard of again; I cannot help thinking that at least a portion of these were really cases of early granular kidney although on their discharge from hospital their urine appeared quite normal. The following case, in which the diagnosis was very doubtful at first, I quote at length, as the notes are now complete:—

CASE 1.—A schoolboy, aged 11 years, was admitted to hospital, under the care of Dr. G. Schorstein, on August 29th, 1902, as a case of "acute nephritis." On the 28th he awoke feeling sick and on passing his urine he noticed it was "red, almost like blood." He stayed at home that day, ate his breakfast and dinner, and in the afternoon vomited, but only a little; he slept well that night. Next day the urine was still red; he then came to hospital and was admitted. He had noticed no frequency of micturition, no headache or other pain, and no swelling anywhere. He had had a similar attack two years ago (no pain, no œdema, and no vomiting), and was in Bromley Sick Asylum for three weeks; he had been quite well since. There was no history of scarlet fever, measles, or diphtheria. There was nothing of importance in the family history. His condition on admission is described as follows: "A healthy looking boy, not anæmic, no puffiness of face, no œdema anywhere. Temperature normal. Pulse—no increased tension, vessel wall not thick. No sign of cardiac enlargement. Retinæ healthy. Lungs, nothing abnormal. Abdomen, no lump felt. Testes healthy. Urine, smoky, reaction acid, specific gravity 1016, it contains about one-tenth of albumin by volume (heat test). Microscopical examination shows the presence of blood cells and a few granular casts." The treatment was rest in bed, a milk diet, and purgatives as required.

Further notes are as follows. On Sept. 2nd no tubercle bacilli could be found in the urine. On the 29th the patient was allowed to sit in a chair for two hours daily; he felt and looked well, but was still passing blood in his urine as before. On Oct. 5th the patient had been complaining of aching pains in the lumbar regions and was not to get up again for the present. He was taking eight minims of tincture of perchloride of iron three times daily. From Oct. 16th until the end of November he had dry cupping to his loins daily; this at once relieved the pain and the hæmaturia diminished. On Nov. 3rd the urine was again found to be free from tubercle bacilli and radiographs of the kidney and bladder regions appeared quite normal. The amount of blood in the urine fluctuated from day to day and on Dec. 12th he was sent to a convalescent home, still passing blood.

During the following nine months he attended as an out-patient; at the end of that time his urine was clear and he was discharged. On August 22nd, 1904, the patient was admitted under the care of Dr. Percy Kidd for hæmaturia, which had recommenced on the 20th; he felt perfectly well and there was no œdema; there was no change in his condition except that the arteries were now definitely thickened; the fundi were still clear; the urine was of specific gravity 1008 and contained granular and hyaline casts, blood, and one-eighth of albumin. He was in hospital for six weeks; the urine on his discharge still contained a little blood. On Jan. 31st, 1905, the boy was brought back to the hospital; he had been feeling ill for three weeks; the first symptoms were nausea and frontal headache worst in the morning; then he began to be sick after meals and complained of pain in the epigastrium; his nose bled often during the night; he had to rise at night to pass his urine. He had not noticed any blood in his urine. On admission he was slightly anæmic and rather drowsy; there was no œdema. The pulse tension was low; the vessels were markedly thickened. The heart's apex beat was heaving in character and well outside the nipple line. Examination of the fundi showed no hæmorrhages or œdema. The urine was pale, of specific gravity 1010; it contained a trace of albumin and blood cells but no casts. The total amount of urine passed on Feb. 1st was 60 ounces. He was given a milk diet; no drugs were used except a saline purgative in the mornings. The epistaxis and vomiting continued, although the anterior and posterior nares were plugged and adrenalin was used; the bleeding was only temporarily controlled. On Feb. 5th the total amount of urine passed was only 20 ounces. Hot packs were used and pilocarpine was given subcutaneously, but there was no improvement and on the 7th he died "suddenly."

Necropsy.—At the post-mortem examination the kidneys were found to be small, equal in size, together weighing 7½ ounces; the capsule was thickened and left a granular surface when removed; the cortex was much diminished. The heart weighed 10½ ounces, the left ventricle being hypertrophied and dilated. There were no other lesions except widespread arterial degeneration.

Another case I quote in full, as I had the opportunity of seeing it while house surgeon to Mr. Fenwick.

CASE 2.—A lad, aged 20 years, was admitted to the London Hospital on Dec. 11th, 1905. Three weeks before admission the patient noticed blood in his urine. There was no pain and no other trouble of any kind. The urine was the same colour throughout micturition and there was blood in it each time he passed urine; this continued until he came to hospital, the amount of blood passed gradually increasing; there were no clots in the urine. One week later pain came on in the lumbar region, usually starting in the left side, and then appearing in the right; it was worse when lying down and by night than by day; it passed forwards on the left side to the groin and along the penis, never to the testicles; it was never severe, but dull and aching in character. After the onset of hæmaturia he had to rise twice each night to pass urine. He could lie comfortably on either side as a rule, but when the pain was bad lay on the side least affected. There were no vomiting, no nausea, no puffiness of the face in the morning, and no swelling of the feet. He had had a cough for three months but there were no night sweats and he was not losing flesh. Three years previously he had a similar attack while in Russia, which lasted four weeks and was "cured by medicine." There was no history of syphilis or gonorrhœa and nothing to suggest hæmophilia. The family history contained nothing of interest.

On admission he was anæmic, but otherwise healthy in appearance. The pulse tension was higher than normal and the vessel wall was palpable. The testicles, prostate, and vesiculæ seminales were healthy. The chest and abdomen showed no abnormality. There were no retinal hæmorrhages nor œdema. Radiographs of the kidney and bladder regions were negative. The bladder was examined by means of the cystoscope and found to be healthy. The urine was smoky and red in colour, of specific gravity 1026; it contained albumin in proportion to the blood present. Microscopical examination showed the presence of blood cells, hyaline casts, and phosphatic crystals; there were no tubercle bacilli, and no bilharzia ova. The amount of urine passed in 24 hours was 52 ounces. The patient was instructed to take a mixture containing gallic acid and opium and was sent home still passing blood in his urine. On Dec. 29th he was readmitted. The hæmaturia had continued and the patient looked more anæmic. Mr. Fenwick again examined him with the cystoscope and saw blood coming from the left ureteric orifice; the efflux from the right ureter was small but clear. On Jan. 29th, 1906, he was again discharged, the urine then containing only a trace of blood. On Sept. 27th the patient returned. He had been well until two weeks

previously when the hæmaturia recommenced; he was, however, markedly anæmic. The urine had a specific gravity of 1010 and contained blood but no casts and no tubercle bacilli were seen. Radiographs were again negative. The cystoscope showed that the blood came from the left side.

On Oct. 5th the following operation was performed by Mr. Fenwick, the anæsthetic being ether. An incision was made in the left loin and the kidney exposed; its capsule was found to be thickened and the kidney substance was firmer than normal. The upper part of the ureter was exposed and seen to be healthy. An incision was now made into the lower pole of the kidney along its convex border; it extended well into the kidney substance but did not enter the pelvis. This incision was then sewn up with catgut; the wound was closed, except for a drainage-tube, which was removed five days later. The wound healed by the first intention and the patient was allowed to get up three weeks after the operation. The urine after the first 24 hours was free from blood and from albumin and remained free until Oct. 30th when the patient was discharged.

In this case the bleeding, though never very copious, continued over so long a period that a severe anæmia was produced, the kidney disease itself not being advanced enough to cause an extreme cachexia. Simple medical treatment did not arrest the hæmorrhage while an operation at once brought about an improvement. The case is interesting for another reason, as it shows that the hæmorrhage may be persistently unilateral, though due to a disease affecting both kidneys and associated with, if not partly caused by, general systemic changes.

Frequency.—It is not possible to get an accurate idea of the frequency of hæmaturia in granular kidney at present, for quite a number of cases are not recognised as such, and the details necessary for their recognition are not recorded. My 31 cases were selected from 2229 cases of granular kidney. This gives a frequency of 1 in 72, probably far too low.

Age-distribution.—It was at first thought that hæmaturia occurred late in granular kidney, but this is not supported by the cases collected for this paper. The youngest case was eight years old, the eldest 64 years; the average age was 26·2 years and 65 per cent. of the cases were under 30. In Dr. West's statistics[16] 79 per cent. of cases of granular kidney were over 40 years at death, so that hæmaturia appears to be one of the earlier symptoms.

Stage of the disease.—In 21 of the cases there were no increased arterial tension, no thickening of the walls of the blood-vessels, and no other sign of disease, except the state of the urine. In these patients, then, hæmaturia was the first indication of a chronic nephritis, and called attention to it at quite an early stage of the disease. This is of some interest, as the early diagnosis of granular kidney is extremely difficult. In 31 cases the fundi of the eyes were examined with the ophthalmoscope, and in only six were changes (such as retinitis and retinal hæmorrhages) found; the other 25 were pronounced to be normal.

Sex.—Judging from these cases sex appears to have no influence in the causation of hæmaturia, 29 being in males and 16 in females, numbers which agree very closely with Dr. West's statistics with regard to granular kidney; he gives a ratio of 26 to 16.

Differential diagnosis.—Renal hæmorrhage is usually recognised by the fact that the blood is intimately mixed with the urine. I do not propose to discuss the diagnosis of the source of the hæmorrhage; in doubtful cases cystoscopic examination is most useful. A mild attack of hæmaturia, due to granular kidney, may be mistaken for a *subacute nephritis*. The chief differences are—(1) that there is little or no œdema; (2) the amount of blood and albumin in the urine fluctuates from day to day; and (3) the course of the case is different, as it may be weeks or months before the hæmorrhage ceases; when it does the urine is of low specific gravity and contains casts with a trace of albumin. As an example I quote the following case.

CASE 3.—A youth, aged 17 years, was admitted to the London Hospital under the care of Dr. F. J. Smith on Feb. 26th, 1906, with the following history. He had been ill for one month, complaining of a sore throat and "pains all over." During the second week he noticed some slight swelling of his face. He suffered from headache and was sick once. There had been nothing abnormal about the urine. He had never had scarlet fever or any other illness. On admission there was slight puffiness of the face and eyelids but no œdema of the legs or genitals. There was no sign of cardiac hypertrophy; the pulse tension was moderate, the artery wall was not thickened, and the fundi were clear. The urine was acid, smoky in appearance, of specific gravity 1024; it contained a trace of albumin. Microscopical examination showed blood-cells but no casts. The hæmaturia gradually diminished. On March 6th the urine was free from blood, and casts, both hyaline and granular, were seen. The amount of urine passed in 24 hours was from 70 to 80 ounces. Later, blood again appeared in varying amounts and on March 23rd the patient went home feeling quite well but still passing a small amount of blood in his urine.

This case was regarded as a subacute nephritis, but I submit that it was probably an example of hæmaturia due to granular kidney.

Hæmaturia due to *renal tuberculosis* will be recognised by the more marked nocturnal frequency. The cystoscope will also show changes in the ureteric orifices; above all, tubercle bacilli may be found in the urine.

Renal calculi may be detected by the aid of the x rays. There will usually be a history of typical renal colic, except in the rare cases of aseptic embedded calculi which are most difficult to recognise. Renal colic may, however, be produced by the passage of blood clots along the ureter, in which case these are found in the urine and can be recognised by their characteristic shape.

Malignant disease of the kidney in the later stages may be suspected on the discovery of a renal tumour on one side. The examination of the urine may show the presence of fragments of growth. In these cases there is usually profuse bleeding in the early stages sufficient to justify exploration of the kidney through the loin. When there are renal tumours with irregular surfaces in both loins it is probable that the hæmorrhage is coming from congenital cystic kidneys. I have recently seen such a case in hospital but at present the diagnosis is unconfirmed.

Hæmaturia due to the *bilharzia hæmatobia* is differentiated by finding the characteristic ova in the urine; in these cases the hæmorrhage is usually vesical. Mr. Fenwick[17] quotes a case of hæmaturia due to *tertiary syphilis* of the kidney. This was diagnosed by finding other signs of syphilis and by the effect of specific treatment. Mr. Fenwick[18] has also described cases of hæmaturia due to *angiomata* of the renal papillæ. In these the urine was normal and the diagnosis was only made in the course of operations rendered necessary by the profuseness of the bleeding.

Cause.—The hæmaturia of granular kidney does not appear to depend on the purely mechanical causes (high arterial tension and deterioration of the vessel walls) which bring about the later manifestations, such as cerebral or retinal hæmorrhage; for, like epistaxis, it may occur before these changes are noticeable. It is more probably due to local infiltration set up by some toxin; perhaps the same poison is responsible for the general vascular weakening which appears later, such changes appearing in the kidney first and advancing more rapidly there than in other organs.

Prognosis.—This depends almost entirely on the degree of kidney change that is present. Of the 45 cases which I collected only four patients died while under observation, and none of these from hæmorrhage, which shows that the bleeding is rarely severe or uncontrollable. Dr. West has followed a case for 11 years, and one patient treated at the London Hospital had been passing blood in his urine at intervals for 17 years. Anæmia was a marked feature in some of the patients, and this was doubtless partly due to the hæmaturia; but the bleeding is, as a rule, controlled by treatment and can hardly affect the prognosis much.

Treatment.—Rest in bed, purgatives, and a diet consisting chiefly of milk, eggs, and bread-and-butter will, as a rule, be sufficient to stop the bleeding. Hæmostatic drugs, such as calcium lactate or calcium chloride, may be tried, but are hardly necessary. Iron in some form will be useful during convalescence. 38 of the cases which I collected were so treated, and with the exception of three deaths all recovered. The three deaths were in advanced cases, all of the patients having retinal changes and other signs of marked cardio-vascular degeneration. Recurrence is extremely probable, for the cause, the chronic nephritis, still remains. One case was explored for a renal calculus which did not exist, and died ten days later. Surgical treatment has been tried in a

[16] On Granular Kidney, p. 7.

[17] The Cardinal Symptoms of Urinary Disease, p. 25.

[18] A Handbook of Clinical Cystoscopy, p. 392.

number of cases; where no changes in the fundi can be detected and the patient's general condition is good enough to warrant the administration of a general anæsthetic, operation may be advisable to check bleeding which does not react sufficiently to medical treatment.

Two methods of operation have been practised with some success. In the one, introduced by Dr. Edebohls, the capsule of the kidney is removed as entirely as possible. He even claims that this procedure has a curative effect on the nephritis itself. Four cases were treated in this way; in all the hæmaturia ceased for a time, but two relapsed within a few months. The other method is described by Mr. Fenwick. He believes that the blood escapes from the lower pole of the kidney; he therefore makes an incision into this part of the kidney substance without opening the renal pelvis. This causes a scar to form which obliterates the vessels responsible for the bleeding, and so stops it. Case 2, quoted above, is an example of this method.

Conclusions.—Renal hæmorrhage is not at all uncommon in the course of chronic interstitial nephritis and differs from other hæmorrhages occurring in the disease, as it often appears very early. This leads to difficulty in diagnosis, but may enable cases of chronic nephritis to be recognised sooner than they otherwise would be. Medical treatment is, as a rule, sufficient to control the bleeding, but recurrence is probable. Surgical treatment may be necessary in rare cases of severe hæmaturia occurring early in the disease.

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THE TREATMENT OF DISEASE AND DEFORMITY DUE TO SCAR TISSUE.

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A BRIEF moment's thought suffices to conjure up a host of lesions which may represent the remains of a subsided inflammation. Both medicine and surgery are concerned with these crippling results of injury or disease. The scar of a burn may distort the features or impede the movement of an important joint, the healing of any simple incision may be the seat of an ugly cheloid, the cure of a gastric ulcer may herald pyloric stenosis, and an adherent pericardium may remain as the permanent legacy of a departed rheumatic attack. Such troubles as these are all testimonies of a cured process of inflammation. The lessons of pathology indicate that it is not desirable to interfere with inflammatory reaction, even if we possessed the clinical means of controlling it. But it is not possible to contemplate the havoc which inflammation may leave in its train without the search for a method of alleviating it.

Surgical measures obviously present themselves as offering the prospect of remedying some deformities caused by scars. In cases where the clothes have been involved in a conflagration and the whole axilla has been burnt it occasionally happens that the arm becomes fixed to the chest-wall by adhesions. This disability can be relieved by operation—sometimes an extensive one. Scar-like bands causing intestinal obstruction likewise yield to the knife. Similarly gastric adhesions, which have been responsible for some of the most distressing forms of chronic dyspepsia, have been effectually dealt with by surgeons after laparotomy. Adhesions after injuries to joints are successfully treated by massage and passive movement.

The majority of scars concerning which advice is sought are objectionable, not because they interfere with function, but because they are disfiguring. Hypertrophic scars and cheloid may in addition be painful, but the cosmetic reasons for demanding treatment are urgent enough. The pitting of small-pox may serve as an example. Malcolm Morris[1] relates a case wherein the scarring was so extensive as to render the patient an object of horror. He was treated by inducing a strong inflammatory reaction by the application of resorcin ointment to the face. With the subsidence of the inflammation desquamation set in. The thickened borders of the scars disappeared and the pits became raised to the level of the surrounding skin, so the patient's face no longer debarred him from social intercourse. Resorcin is the type of a drug which, carefully used, sets up just enough hyperæmia to suffice for the absorption of the organised exudate in the subcutaneous tissue, but a successful result is always a problematical matter. Massage and painting with iodine are milder measures calculated to induce hyperæmia with a similar object, but with similar limitations.

There is one variety of scar tissue for which an opposite line of treatment is recommended—i.e., cheloid. This differs from ordinary scar tissue in containing an abundance of capillaries. Local treatment aims at diminishing its vascularity. To this end lead collodion, elastic pressure, deep incisions, and electrolysis are employed but with doubtful success only.

The introduction of light and x ray treatment has constituted a real advance in the therapeutics of scar tissue, more especially when it is in a thickened and hypertrophic condition. When such scars contract they give rise to most unsightly appearances and light treatment has, in numerous instances, achieved marvellous improvement or has, indeed, effected absolute cures. It is well known that the scars left when lupus nodules have been exposed to the Finsen light are smooth and soft. Experience has now shown that the exposure of hypertrophic contracting scars to the Finsen light causes an inflammatory reaction, on the subsidence of which the scars generally become flatter, more supple, and tend to vanish. X rays have also produced excellent results in the same conditions. These rays produce fatty degeneration of the cells on which they act and then apparently their absorption follows. Fibrous elements in the skin are the most difficult to influence in this way, but it seems quite clear that even fibrous tissue will undergo degeneration. An active hyperæmia is associated with this process, an exudation of leucocytes invades the cells in the scar, and they are eventually removed by phagocytosis. Light treatment, therefore, affords most benefit when it is necessary to deal with scars from a cosmetic point of view and the Finsen light is undoubtedly the method of election.

But there is yet another means of treatment which may compete with radio-therapy in the matter of results and is superior to it in that it requires no elaborate apparatus for its application. The process is merely one of hypodermic medication and the published records of the cases treated are definitely encouraging. The drug employed is fibrolysin. This is a combination of one molecule of thiosinamine with half a molecule of salicylate of sodium. For some few years past desultory references to thiosinamine have been made in papers on dermatology, in connexion with the treatment of unsightly scars, cheloid scleroderma, and lupus. It was, indeed, for the last affection that Hebra introduced the drug into therapeutics. Its constitution is indicated by the chemical terms allyl-sulphocarbamide or allyl-sulpho-urea. It is prepared from the oil of mustard and occurs in colourless crystals, is insoluble in water, and smells faintly of garlic. When used for hypodermic injections it is dissolved in alcohol. Its effects are limited to the blood-forming organs. Several hours after its injection in doses of from one to four grains the leucocytes in the blood are greatly diminished in number, falling as low as 4000 per cubic millimetre. This condition lasts, however, but a short time and is followed by a pronounced leucocytosis. While this change is proceeding a destruction and absorption of fibrous exudation and cicatricial tissue are said to occur.[2]

The claim which Hebra made for thiosinamine in the treatment of lupus was never really substantiated but the extensive clinical use of the drug has shown that there are numerous morbid conditions in which it exercises therapeutic effects of great value. These conditions are all identical in that they are the consequences of inflammatory action, but though their histology is similar they differ widely in their anatomical disposition and pathological results. Thiosinamine undoubtedly possesses a specific action on scar tissue. This obviously implies therapeutic powers of no ordinary extent, for scar tissue dominates morbid anatomy in a high degree. Scar tissue is not limited to the cicatricial fibrosis following chemical or mechanical injuries; it includes the fibrous capsules which arise from the irritation of foreign bodies, abscesses, gummata, and growths, and it embraces the fibrotic thickenings of chronically inflamed serous membranes. Indeed, nephritis and hepatitis will smoulder away only to leave the liver and kidney scarred by bands of fibrous tissue. Much of this fibrosis is protective and conservative in its function and a drug which can indiscriminately act on fibrous tissue wherever its seat and whatever its purpose may be a dangerous remedy. The softening of the fibrous

[1] Practitioner, July, 1905

[2] Wood: Principles and Practice of Therapeutics, thirteenth edition.

capsule which surrounds a quiescent tuberculous focus is the herald of disaster, and it has indeed occurred that the use of thiosinamine in subjects of healed syphilitic disease of the throat with resulting fibrous overgrowth has caused so much softening and swelling of this tissue as to obstruct breathing and necessitate tracheotomy.[3]

Another form of fibrosis should be noted here. It is that variety which apparently is not the result of inflammation but rather the sequel of degeneration. Thus it is met with in diseases of the spinal cord as sclerosis and as fibroid patches in the heart due to arterio-sclerosis of branches of the coronary artery. Thiosinamine is not reputed to exert any specific action on this form of fibrosis, though it has been used in posterior sclerosis of the cord (tabes dorsalis) with some improvement.[4]

Although the possibilities of thiosinamine as a drug of extraordinary value seemed very vast, an impediment to its general employment was offered by the circumstance that it is insoluble in water and its alcoholic solution caused severe pain on hypodermic injection. It was not until Mendel of Essen conceived the idea of combining it with sodium salicylate to form the soluble compound known as fibrolysin that this drawback was removed, and a pharmaceutical product was put at the disposal of the profession in a manner ideally adapted for use. Exposure to air or light causes decomposition of fibrolysin; it is therefore put up in sterile solution in hermetically sealed brown glass ampullæ, the contents of which measure 2·3 cubic centimetres, representing one-third of a gramme of thiosinamine. Each ampulla suffices for one injection. It should be stated that fibrolysin was prepared on the analogy of diuretin which is a combination of insoluble theobromine with sodium salicylate.

I may now indicate in a general way the clinical applications of fibrolysin. Unna demonstrated its benefits in cheloid, and his observations have been abundantly corroborated by others. A far different use has been found for the drug in treating urethral stricture; some writers record successes. Its effect has been put to the test in cases of adhesions between internal organs and even adhesions between serous surfaces. One of the recent reports concerns a case of delayed pneumonic resolution, where the consolidation lasted 10 weeks, but cleared up after injections of fibrolysin. Attempts have been made to obtain some advantage from it in relieving the fibrosis which causes valvular disease of the heart. Fibrous stricture of the pylorus and fibrous contraction of the palmar fascia (Dupuytren's) have in many instances yielded to a series of injections. In the special branches of surgery aurists have sought to alleviate deafness due to sclerotic changes in the labyrinth or adhesions between the ossicles. Ophthalmologists have resorted to it to disperse corneal opacities and to dissolve iritic adhesions.

A critical consideration of the literature impresses one with the view that fibrolysin does indeed possess legitimate applications to this wide field of therapeutics. This impression is emphasised by the personal experience of the writer, which, however, is limited to three cases. One was an instance of Dupuytren's contraction which underwent complete cure; another was a thick keloidal growth situated on the shoulder which improved marvellously; and the third was a case of hypertrophic thickening and lobulation of the skin of the nose (rhinophyma) which diminished sensibly in size as a result of fibrolysin injections. The injections, which must, of course, be given with full antiseptic precautions, are best administered deeply into the gluteal muscles. The proceeding is practically painless and it leaves no after-effects. There seems to be no advantage in injecting in the locality of the scar tissue which it is desired to influence. Fibrolysin has been given by intravenous injection when a rapid effect has been required. An odour of garlic and mustard emanates from the breath in a few minutes, showing that thiosinamine is speedily set free in the blood.

Promise of successful treatment is indicated by definite naked-eye changes, best seen, of course, in thickened pink scars and in typical cheloids which stand out in relief from the skin. These become paler, softer, boggy, and translucent, and their texture gets plastic and pliable. If the injections are abandoned at this stage there is a rapid reversion to the previous condition, because this change only implies a transudation of lymph into the scar tissue, an effect which can also be obtained by injecting hemi-albumose, peptone, urea, or uric acid. This change is, however, preparatory to the ultimate absorption of the morbid fibrous tissue. The microscope demonstrates that the new blood-vessels lose their definition of outline, their contour becomes confused, the angular processes of the fibrous tissue cells become separated from one another, and the component strands look swollen. The serous transudation may well be compared to Bier's treatment by inducing artificial hyperæmia. This treatment also softens indurations, loosens adhesions, and promotes the absorption of inflammatory products. It is perhaps necessary to add that normal fibrous tissue does not undergo these changes as the result of injections of fibrolysin.

When massage or other forms of physical treatment are likely to be serviceable in the relief of conditions for which fibrolysin is to be administered these measures should be simultaneously employed. The value of this is best illustrated by cases of stricture of the urethra and simple stricture of the œsophagus which have proved refractory to dilatation by bougies or sounds. The action of fibrolysin in softening the cicatricial tissue has in many instances permitted the passage of instruments through obstructions which were previously quite impassable, and in this manner has paved the way for effectual cure by mechanical dilatation. Some very striking successes have been achieved in stricture of the œsophagus by this method. The same principle applies to the treatment of joint adhesions in chronic arthritis. Rigidity, stiffening, and thickening are influenced by the fibrolysin injections, but these must be supplemented by massage, active and passive movements, and hydrotherapy. It has indeed been objected that the improvement following the use of fibrolysin is due to the physical therapeutics accompanying it. It has been pointed out that contractures of various kinds may eventually yield to mechanical measures. This, however, cannot apply to such conditions as stricture of the œsophagus, where such measures are impossible, and there are too many of these cases on record to justify the suggestion of mistaken diagnosis as put forward by a recent writer.[5]

It may well be admitted that clinical experience is as yet insufficient to support some of the claims for the therapeutic efficiency of fibrolysin. It exerts an influence on the scars of burns, but it is premature to apply it for the scar which causes traumatic epilepsy. On the other hand, benefit has followed its employment in the cases of perineuritis causing sciatica and other forms of neuralgia. But in regard to cases of pleural adhesions, pelvic cellulitis and its sequelæ, and other diseases where it is used on hypothetical principles, no definite opinion can be advanced. A case has been recorded where widespread abdominal adhesions following an injury and causing intestinal obstruction was cured by injections of fibrolysin.[6] More recently three cases of gastric adhesions have been published which have been so far cured by fibrolysin as to abolish the intense pain from which the patients suffered.[7] These results are fully explained on the ascertained pharmacological action of the drug.

Perhaps the most interesting of what may be termed the remote application of fibrolysin concern its use in middle ear disease. Some observations on its action have been made in the ear department of the General Hospital in Vienna.[8] The injections were given in the arm, beginning with a dose of 0·3 cubic centimetre, gradually increasing to the whole contents of one ampulla—i.e., 2·3 cubic centimetres. The treatment usually comprised from 20 to 30 injections spread over a period of about two months. The injections were discontinued when it was evident that they were not producing continued improvement in the hearing. The treatment was abandoned if no benefit was derived from the first eight or ten injections. The injections were not employed to the exclusion of other means of aural therapeutics, such as politzerisation, aural massage and electricity, but the cases were such as had not been in any way improved by these methods. They were examples of dry otitis media, adhesions to the membrane, and beginning sclerosis between the ossicles. It is obvious that when the sclerosis has advanced to ossification fibrolysin has no pharmacological application. The conclusions arrived at show that

[3] Wiener Klinische Wochenschrift, No. 10, 1903.
[4] Brit. Med. Jour., June 22nd, 1907.
[5] Dobrowolski: Inaugural Dissertation, Koenigsberg, 1907.
[6] Quoted in Medical Review, September, 1907.
[7] Herschell: Folia Therapeutica, 1907.
[8] Monatsschrift für Ohrenheilkunde, 1907, No. 2.

patients with pronounced deafness may benefit to the extent of greatly improved hearing for speech and noise, but recovery to the degree of appreciating the ticking of a watch is not to be anticipated. Tinnitus also undergoes marked diminution.

The injections of fibrolysin have occasionally been followed by temporary untoward effects. One observer has noted pyrexia, another a fall in the pulse rate. Discolouration of the skin around the puncture may persist for some weeks or a small nodule lasting about a fortnight may form at the site of injection. Some patients have complained of headache and lassitude but these symptoms disappear after a few hours. Physical weakness, even approaching to paresis limited to one or two limbs, seems to be met with at rare intervals. Some of these constitutional effects must be attributed to the pharmacological action of the drug in producing serous congestion and hyperæmia. At any rate, the onset of epistaxis or menstruation after the injection of fibrolysin, which has been noted in some instances, is explained on this assumption. On the whole, however, no more apprehension need be entertained by the practitioner who has decided to try the effect of fibrolysin in a suitable case than he would feel in the injection of diphtheria antitoxin.

Brondesbury, N.W.

LABOUR IN A CASE OF TRIPLE PREGNANCY, WITH OBSERVATIONS THEREON.

BY V. ZACHARY COPE, B.A., M.D., B.S. LOND.,
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THE rarity of accurate observations upon cases of triple pregnancy makes it probable that the account which follows may be of general interest. For permission to publish and for suggestions in respect of this case I am indebted to Dr. G. Drummond Robinson, physician to the Endell-street Hospital.

The patient, a married woman, aged 30 years, was admitted to the wards of the British Lying-in Hospital, under the care of Dr. Drummond Robinson, at 10.30 A.M. on August 4th, 1907. Labour had begun at 6 A.M. the same morning and was in full progress at the time of her admission. It was her sixth confinement. Ten years previously, at the age of 20 years, she had been delivered of her first child. The infant was premature and only lived a short while. Since that time she had given birth to four children at full time. Three of these were still living. The abdomen was enormously distended by an evidently abnormally large uterus. Although the patient was a multipara the skin was as tense as in a primipara and showed numerous pink "lineæ." The flanks were bulged out far back so that the general appearance resembled that caused by an excessive ascitic effusion. The superficial abdominal veins were prominent, whilst the veins of the legs were markedly varicose. By palpation a hard, freely moveable mass, which could be nothing other than a fœtal head, was felt in the left hypochondrium. On making Pawlik's grip another head was felt engaged in the pelvic brim, whilst a breech, or that which felt exactly like a breech, was palpated in the right hypochondrium. The backs of two fœtuses were made out to be lying one in each flank looking outwards. Twins were diagnosed and the conclusion was arrived at that the head engaged in the pelvis belonged to the body and breech on the mother's right, whilst the fundal head was presumed to correspond with the body on the left side of the mother. This diagnosis was upset, however, by movements both felt and seen to occur just below the fundal head on the mother's left. A knob just like a foot was felt in this situation. I then surmised that this must represent the breech end of the advancing head, thus making the first child a first vertex presentation. Consequently the fundal head was inferred to be in connexion with the fœtal back on the mother's right and it was thought possible that a mistake had been made in taking the mass in the right hypochondrium to be a breech. But the distinct gap between the fundal head and this mass was not accounted for and since the diagnosis of triplets did not occur at the time I confessed myself puzzled, but slurred over the difficulty in order to express a definite diagnosis to the midwives who were present. The observations made by abdominal palpation would, if logically followed out, have led to the correct diagnosis. The lax condition of the abdominal muscles was favourable to palpation but the passive tension caused by the excessive amount of liquor amnii largely counteracted this. Auscultation did not give much aid. A fœtal heart was indistinctly heard on each side, but the amount of fluid present prevented any accurate observations being made.

Labour pains were strong and frequent. At 11.50 A.M. a vaginal examination revealed the vertex of the first child low down in the pelvic cavity, the os uteri fully dilated, but the membranes still intact. The latter were therefore ruptured by the finger. At 11.55 A.M. a rather small female child was born in the manner corresponding to a first vertex position. A slight pause ensued and I made another vaginal examination to determine how the second child was engaging. It was found to be entering the pelvis breech first—a complete pelvic presentation. The second bag of membranes was still unbroken and was not interfered with for a few minutes in order that a pupil-midwife might also examine. Before that could be accomplished, however, strong pains returned, and about five minutes past 12 the second child was born completely enveloped in the amnion which had to be broken to liberate the infant. The placentæ did not come away but still the uterus remained too large to be completely accounted for by the retention of these. Moreover, some small knob-like projections were felt by the hand which manipulated the uterus. With the idea that these might be fœtal extremities another vaginal examination was undertaken. A third bag of membranes was found presenting and the hard resistance of a vertex was felt on the right of the pelvic inlet, as if slipping down from the right iliac fossa to engage in the brim. It was announced to those present that a third child was presenting by the vertex. Progress was slow, so I examined again and found the position changed. The fœtal vertex could not now be felt but a limb was distinguished floating in the amniotic sac over the pelvic inlet. Hastily concluding this to be a foot I ruptured the membranes, when to my surprise an arm rapidly prolapsed through the vulva, whilst at the same time very strong and more painful uterine contractions supervened. Careful examination now showed the child's head to be in the right iliac fossa and the right shoulder impacted in the pelvic cavity, with the abdomen looking forward and right arm prolapsed. There seemed no prospect of spontaneous delivery despite that the child was a little smaller than usual, so an anæsthetic was administered and internal version performed. The child's left leg was brought down. The umbilical cord got caught round the limb as it descended and the leg had to be well flexed before a loop could be slipped round the knee and over the limb in order to liberate the child. Delivery was then effected without much difficulty. The infant was in a condition of white asphyxia, but revived after careful resuscitative measures. Immediately after the birth of the last child its placenta was expelled and was followed promptly by a larger placenta with two cords attached belonging to the other two children. A considerable but not excessive amount of blood was lost and the mother's condition throughout remained very good.

The first child, a girl, weighed 4 pounds 10 ounces. The second was a boy, weighing 5 pounds 10 ounces. These two were attached to a single large placenta by two separate cords. The other child was a girl, also weighing 5 pounds 10 ounces. It had a separate placenta. The larger placenta weighed 27 ounces and measured 10 inches by 7 inches. The smaller was 6 inches by 7½ inches and weighed 23 ounces; over half its circumference the membranes were attached an inch or more internal to the margin of the placental substance. The umbilical cords were 14½ inches, 18 inches, and 12 inches long respectively.

Remarks.—The occurrence of triplets is comparatively uncommon, being about once in 6000 labours in Great Britain. In Ireland and some continental countries the proportion is a little higher. Still more rarely does it happen that delivery takes place in a building where particular observation can be given to the mechanism of labour. During the last 20 years no other case has occurred in the wards of the British Lying-in Hospital, nor has there been any case of triplets at Queen Charlotte's Hospital till last month. There have been two cases since 1880 at the General Lying-in and one at the City-road Hospital during the last ten years. Cases have certainly been reported from out-patient departments but it is much more difficult to keep them under

accurate observation, since delivery is often partly effected by the time the medical man or midwife arrives.

The diagnosis of triplets before labour is usually somewhat difficult. Pinard relates how he recognised three distinct fœtal heads by palpation, whilst Duval heard three different fœtal hearts on one occasion. In the present case auscultation was difficult and unsatisfactory, but palpation should have given the clue to the diagnosis. The fact that the third head was hidden behind the breech of the second child made matters a little difficult. According to Edgar, 60 per cent. of triplet children present by the head, whilst the tendency to abnormal presentation is greatest in the case of the last child. This is the more readily understood when we reflect that we are dealing with an excessively distended uterus, which even when contracted down fairly well after the birth of the first two children is still likely to leave sufficient room for alterations to take place in the position of the last child. It must be rather exceptional to have, as in the present instance, vertex, breech, and shoulder presentations occurring in the same labour.

Triplets are said to occur chiefly from the twenty-fifth to the thirtieth year of life, a period which is accounted the most fertile, and during which the generative powers of a woman seem at their maximum. The mother's age, 30 years in this case, comes just at the end of this time of special reproductive activity.

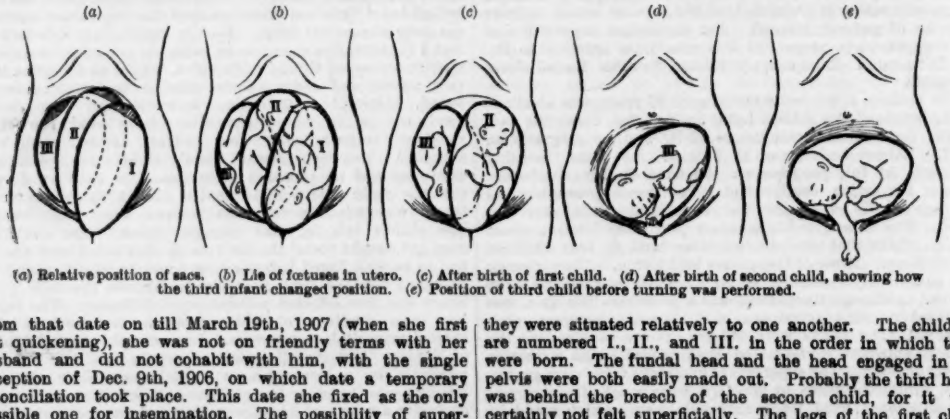
The fact that the larger placenta showed a clear line of distinction between its two component parts and that one section was much smaller than the other, taken together with the observation that one child weighed a pound less than the other, leads to the consideration of the possibility of superfœtation. A tentative inquiry was put to the mother on this point, in response to which she volunteered definite and decisive information. The last menstrual period was from Nov. 13th to 18th, 1906. From that date on till March 19th, 1907 (when she first felt quickening), she was not on friendly terms with her husband and did not cohabit with him, with the single exception of Dec. 9th, 1906, on which date a temporary reconciliation took place. This date she fixed as the only possible one for insemination. The possibility of superfœtation was thus negatived and the almost exact duration of pregnancy, following on the single coitus, ascertained. Save during pregnancy and lactation the patient averred her menstrual times were always regular. One was due on Dec. 13th but was prevented by the fertilisation which must have occurred between Dec. 9th and 13th. Reckoning from Dec. 9th, 1906, to August 4th, 1907, gives the 238th day as that on which labour supervened. It is well known that labour usually comes on prematurely with triplets; but it is interesting to observe that reckoning the expected time of labour in the usual way from the beginning or end of the last menstrual period, the children would have appeared almost full time. The case therefore illustrates the large margin of error which is possible in the recognised methods of calculating the time of labour.

A debateable question raised is the most favourable time for fertilisation. The current text-books say that just before or just after the menstrual period is the usual time, but most seem inclined to the view that the days following menstruation are more especially suitable. This, merely on *a priori* grounds, seems to me improbable. Given the discharge of an ovum or of a number of ova which become fertilised, I think it reasonable to conclude that the time when the mucosa is hypertrophied and engorged with blood is the most opportune for the lodgment, nutrition, and development of these ova. In this case we are provided with evidence, which seems perfectly trustworthy, to the effect that fertilisation occurred within the four days intervening between the time of insemination on Dec. 9th and the onset of the expected menstrual discharge on Dec. 13th. Triplets were the result. Neither amongst her near relatives nor those of her husband is there any other instance of multiple pregnancy—not even twins. It seems tempting to infer, therefore, that the time of fertilisation was a factor in the unusual fertility. If, as the text-books assert, the time just following menstruation is most commonly the time of conception, this case is a remarkable exception and would almost lead us to think that the pre-menstrual time is more favourable to the development of fertilised ova. It is, of course, impossible to dogmatise on such a question.

Triplets may arise from the fertilisation of one, two, or three ova. The more common origin of triplets is from two ova, one of which divides and gives rise to uniovular twins of the same sex. The rarer way was exemplified in this case, for the fertilisation of three ova was sufficiently proved. The larger placenta showed well-marked indication of being formed by the junction of two smaller ones; there were three separate cords and three complete bags of membranes. The chorions attached to the larger placenta were fused at the line of contact. The sexes of the children attached to the one placenta were different.

Quickening was first felt on March 19th, 1907. This was during the thirteenth week of pregnancy and must be considered rather early. Estimating roughly from this, the mother thought she had gone to full term.

The disposition of the parts made out by palpation before delivery, taken together with the actual mechanism as observed in the course of labour, enable us to give the lie of the fœtuses in utero and to describe how delivery was effected. I venture to give rough diagrams showing how they were situated relatively to one another. The children are numbered I., II., and III. in the order in which they were born. The fundal head and the head engaged in the pelvis were both easily made out. Probably the third head was behind the breech of the second child, for it was certainly not felt superficially. The legs of the first child and the breech of the third were very distinct, although, as said above, the true significance of the latter was not realised before labour.



(*a*) Relative position of sacs. (*b*) Lie of fœtuses in utero. (*c*) After birth of first child. (*d*) After birth of second child, showing how the third infant changed position. (*e*) Position of third child before turning was performed.

The first child corresponded to a V_1 presentation. After she was born the breech of the second child quickly came down into the pelvis, and simultaneously the breech end of the third child inclined towards the mother's left side. After the delivery of the second child in the manner of a B_2 presentation, the head of the third, instead of sliding down to engage in the superior strait, hitched against the right side of the brim, whilst the breech fell still more over to the mother's left. This movement was possibly furthered by the manipulation of the uterus undertaken to prevent undue relaxation after the two children had been born. At this time the knob-like projections of limbs were palpated in the umbilical region, though the other parts of the child were not accurately made out by abdominal examination. Of course, there was now no head felt at the fundus. Finally the head slipped back completely into the right iliac fossa, the face still being anterior, whilst the right arm prolapsed outside the vulva when the membranes ruptured. A third oblique position was thus produced. The original lie of the children, therefore, was respectively V_1, B_2, and V_2, the last becoming third oblique after the birth of the other children. The unusual space left after the birth of the first two

combined with the manipulation of the uterus through the abdominal wall were contributing factors in the change of position. Children V_1 and B_2 had a conjoined placenta. The change in position of the third child was most probably the reason why this large placenta came away last of all.

The puerperium was uneventful. The uterus involuted quite normally. The lax condition of the abdominal walls after delivery was very remarkable. Puerperal complications are said to occur more commonly in the case of triplets. This is probably because of the unusual strain on the mother and the liability to complications during the labour. No collapse occurred after labour, although such an enormous reduction in the intra-abdominal tension had taken place so comparatively suddenly. I believe that it is in these cases that the application of a firm binder is more especially useful in averting collapse.

In cases of triplets the children are often very premature and many are stillborn. The fœtal mortality (according to Edgar) is about 31 per cent. The children delivered at this labour were certainly slightly premature but they all thrived very well after birth. However, I have recent information that one child died when two months old from broncho-pneumonia. The other two are in splendid condition.

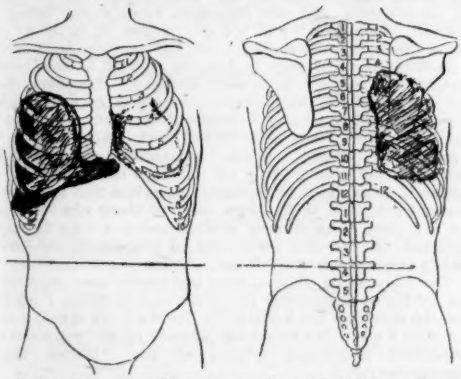
Bessborough-gardens, S.W.

NOTE ON AN ABNORMALITY OF THE LIVER SIMULATING A THORACIC TUMOUR.

BY E. A. ELDER, M.A., B.SC., M.B., CH.B. EDIN.,
AND
J. M. POSTLETHWAITE, B.A. CANTAB., M.R.C.S. ENG., L.R.C.P. LOND.,
HOUSE SURGEONS, BLACKBURN AND EAST LANCASHIRE INFIRMARY.

THE patient, a man, aged 57 years, was admitted to the Blackburn and East Lancashire Infirmary on the evening of Dec. 16th, 1907, partially unconscious and suffering from dyspnœa. He had been working up to three days previously. The history of the illness was that on Dec. 13th while stretching up to the mantelpiece he was seized with sudden pain in the chest and with shortness of breath.

On admission he was suffering from severe dyspnœa and had a pulse rate of 106, his temperature being 101·6° F. The lungs produced a highly resonant note on percussion, except on the right side, where an area of dulness extended from the second interspace to the costal margin in front and going as high as the spine of the scapula behind. Over the dull area was an absence of breath sounds, of vocal



Rough diagram to illustrate area of absolute dulness on the right side of chest. The shading should have extended up to the lower border of the second rib in front.

resonance, and vocal fremitus, but harsh vesicular breathing, accompanied by numerous crepitations and a few sibilant rhonchi, could be heard over the rest of the lungs. The heart appeared to be enlarged; the apex beat was at the level of the sixth rib, half an inch outside the nipple line. The heart sounds were muffled and considerably masked by respiratory sounds. The legs were œdematous up to the knees. There was no albumin in the urine. The patient was restless and irritable and apparently unable to answer questions. He gradually lost consciousness and died on Dec. 18th.

A post-mortem examination was made. On opening the right thoracic cavity a large, smooth, rounded tumour was seen projecting up through the right side of the diaphragm into the thoracic cavity and displacing the lower and middle lobes of the right lung, which were collapsed and shrunken into a very small size. The lower and middle lobes were pushed up by the tumour into the upper and back part of the right thorax against the upper lobe which was emphysematous. The upper convex surface of the tumour was covered by the diaphragmatic pleura and reached to the level of the second rib. The inferior surface forming the base was slightly concave and rested upon what was apparently the liver beneath it but at the same time was attached all round to the remainder of the diaphragm. On opening the abdomen the liver was seen in its usual position but seemed to be of unusual shape and to be minus the gall-bladder. It extended from the right hypochondrium almost to the left but no division into the right and left lobe could be discerned. After removing the organ from the abdominal cavity the gall-bladder was observed lying behind it and connected with the thoracic tumour which on section was found to consist of liver substance. These two liver masses were connected by a duct from each, which joined to form a common duct leading to the duodenum. A third small lobe of liver substance was found situated above on the left extremity of the lower lobe, being connected to it by a very narrow neck of liver tissue and surrounded by a fold of peritoneum. The weight of the tumour was 38 ounces, the smaller mass 23 ounces, and the smallest three ounces. The heart: the pericardium was adherent and very much thickened. The right auricle and ventricle were filled with ante- and post-mortem clots. The tricuspid valve admitted four fingers to the middle joint; there were old vegetations on the valve. The left ventricle was hypertrophied. The aortic valves were apparently normal. The lungs: on the right side the pleura was slightly adherent to the chest wall. The lower and middle lobes were collapsed, the upper being emphysematous. On the left side the pleura was extensively adherent to the chest wall. The lung was emphysematous, the lower lobe being œdematous. The spleen was very small; it measured three inches by one inch.

We are indebted to Dr. M. Bannister for his kind permission to publish this case.

Blackburn.

THE CELL AS A FACTOR IN PHAGOCYTOSIS.

BY H. WANSEY BAYLY, M.A. CANTAB., M.R.C.S. ENG., L.R.C.P. LOND.,
ASSISTANT IN THE BACTERIOLOGICAL DEPARTMENT OF ST. GEORGE'S HOSPITAL; DIRECTOR OF THE OPSONIC DEPARTMENT OF THE CLINICAL RESEARCH ASSOCIATION.
(*From the Bacteriological Department, St. George's Hospital.*)

IN the paper on Phagocytosis read before the Medical Section of the Royal Society of Medicine on March 25th[1] Mr. S. G. Shattock and Mr. L. S. Dudgeon emphasised the importance of the rôle of the cell and demonstrated that it, as well as the serum, played a part of some importance. In July, 1907, with the view of endeavouring to ascertain whether fatigue lowered the power of resistance to infection by acting on the cell or the serum, I made 88 determinations of the tuberculo-opsonic index of 44 women in labour in Queen Charlotte's Lying-in Hospital, Marylebone-road, N.W. As the observation seems to suggest that the lowered resistance to infection in women during and immediately after labour may be due at least in part to want of avidity of the cell, I have thought that it might be of some interest to those who heard, or have since read, the interesting paper mentioned above.

With each patient's serum I made two determinations of the tuberculo-opsonic index, in the one case using the patient's own cells and in the other using my cells. I found, using my own cells, that in 39 cases the index was between 0·8 and 1·2. Of the remaining five cases three were above 1·2 and only two below 0·8, thus confirming Dr. G. T. Western's conclusion that fatigue does not lower the opsonic

[1] THE LANCET, March 28th, 1908, p. 933.

accurate observation, since delivery is often partly effected by the time the medical man or midwife arrives.

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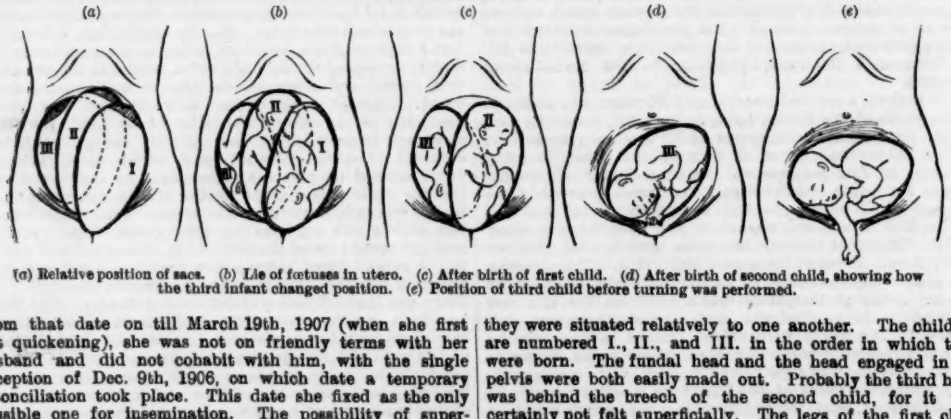


(a) Relative position of sacs. (b) Lie of fœtuses in utero. (c) After birth of first child. (d) After birth of second child, showing how the third infant changed position. (e) Position of third child before turning was performed.

From that date on till March 19th, 1907 (when she first felt quickening), she was not on friendly terms with her husband and did not cohabit with him, with the single exception of Dec. 9th, 1906, on which date a temporary reconciliation took place. This date she fixed as the only possible one for insemination. The possibility of superfœtation was thus negatived and the almost exact duration of pregnancy, following on the single coitus, ascertained. Save during pregnancy and lactation the patient averred her menstrual times were always regular. One was due on Dec. 13th but was prevented by the fertilisation which must have occurred between Dec. 9th and 13th. Reckoning from Dec. 9th, 1906, to August 4th, 1907, gives the 238th day as that on which labour supervened. It is well known that labour usually comes on prematurely with triplets; but it is interesting to observe that reckoning the expected time of labour in the usual way from the beginning or end of the last menstrual period, the children would have appeared almost full time. The case therefore illustrates the large margin of error which is possible in the recognised methods of calculating the time of labour.

A debateable question raised is the most favourable time for fertilisation. The current text-books say that just before or just after the menstrual period is the usual time, but most seem inclined to the view that the days following menstruation are more especially suitable. This, merely on *a priori* grounds, seems to me improbable. Given the discharge of an ovum or of a number of ova which become fertilised, I think it reasonable to conclude that the time when the mucosa is hypertrophied and engorged with blood is the most opportune for the lodgment, nutrition, and

they were situated relatively to one another. The children are numbered I., II., and III. in the order in which they were born. The fundal head and the head engaged in the pelvis were both easily made out. Probably the third head was behind the breech of the second child, for it was certainly not felt superficially. The legs of the first child and the breech of the third were very distinct, although, as said above, the true significance of the latter was not realised before labour.

The first child corresponded to a V_1 presentation. After she was born the breech of the second child quickly came down into the pelvis, and simultaneously the breech end of the third child inclined towards the mother's left side. After the delivery of the second child in the manner of a B_2 presentation, the head of the third, instead of sliding down to engage in the superior strait, hitched against the right side of the brim, whilst the breech fell still more over to the mother's left. This movement was possibly furthered by the manipulation of the uterus undertaken to prevent undue relaxation after the two children had been born. At this time the knob-like projections of limbs were palpated in the umbilical region, though the other parts of the child were not accurately made out by abdominal examination. Of course, there was now no head felt at the fundus. Finally the head slipped back completely into the right iliac fossa, the face still being anterior, whilst the right arm prolapsed outside the vulva when the membranes ruptured. A third oblique position was thus produced. The original lie of the children, therefore, was respectively V_1, B_2, and V_3, the last becoming third oblique after the birth of the other children. The unusual space left after the birth of the first two

combined with the manipulation of the uterus through the abdominal wall were contributing factors in the change of position. Children V_1 and B_2 had a conjoined placenta. The change in position of the third child was most probably the reason why this large placenta came away last of all.

The puerperium was uneventful. The uterus involuted quite normally. The lax condition of the abdominal walls after delivery was very remarkable. Puerperal complications are said to occur more commonly in the case of triplets. This is probably because of the unusual strain on the mother and the liability to complications during the labour. No collapse occurred after labour, although such an enormous reduction in the intra-abdominal tension had taken place so comparatively suddenly. I believe that it is in these cases that the application of a firm binder is more especially useful in averting collapse.

In cases of triplets the children are often very premature and many are stillborn. The fœtal mortality (according to Edgar) is about 31 per cent. The children delivered at this labour were certainly slightly premature but they all thrived very well after birth. However, I have recent information that one child died when two months old from broncho-pneumonia. The other two are in splendid condition.

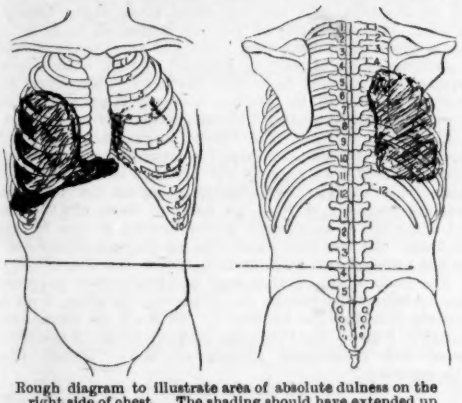
Bessborough-gardens, S.W.

NOTE ON AN ABNORMALITY OF THE LIVER SIMULATING A THORACIC TUMOUR.

BY E. A. ELDER, M.A., B.SC., M.B., CH.B. EDIN.,
AND
J. M. POSTLETHWAITE, B.A. CANTAB., M.R.C.S. ENG., L.R.C.P. LOND.,
HOUSE SURGEONS, BLACKBURN AND EAST LANCASHIRE INFIRMARY.

THE patient, a man, aged 57 years, was admitted to the Blackburn and East Lancashire Infirmary on the evening of Dec. 16th, 1907, partially unconscious and suffering from dyspnœa. He had been working up to three days previously. The history of the illness was that on Dec. 13th while stretching up to the mantelpiece he was seized with sudden pain in the chest and with shortness of breath.

On admission he was suffering from severe dyspnœa and had a pulse rate of 106, his temperature being 101·6° F. The lungs produced a highly resonant note on percussion, except on the right side, where an area of dulness extended from the second interspace to the costal margin in front and going as high as the spine of the scapula behind. Over the dull area was an absence of breath sounds, of vocal



Rough diagram to illustrate area of absolute dulness on the right side of chest. The shading should have extended up to the lower border of the second rib in front.

resonance, and vocal fremitus, but harsh vesicular breathing, accompanied by numerous crepitations and a few sibilant rhonchi, could be heard over the rest of the lungs. The heart appeared to be enlarged; the apex beat was at the level of the sixth rib, half an inch outside the nipple line. The heart sounds were muffled and considerably masked by respiratory sounds. The legs were œdematous up to the knees. There was no albumin in the urine. The patient was restless and irritable and apparently unable to answer questions. He gradually lost consciousness and died on Dec. 18th.

A post-mortem examination was made. On opening the right thoracic cavity a large, smooth, rounded tumour was seen projecting up through the right side of the diaphragm into the thoracic cavity and displacing the lower and middle lobes of the right lung, which were collapsed and shrunken into a very small size. The lower and middle lobes were pushed up by the tumour into the upper and back part of the right thorax against the upper lobe which was emphysematous. The upper convex surface of the tumour was covered by the diaphragmatic pleura and reached to the level of the second rib. The inferior surface forming the base was slightly concave and rested upon what was apparently the liver beneath it but at the same time was attached all round to the remainder of the diaphragm. On opening the abdomen the liver was seen in its usual position but seemed to be of unusual shape and to be minus the gall-bladder. It extended from the right hypochondrium almost to the left but no division into the right and left lobe could be discerned. After removing the organ from the abdominal cavity the gall-bladder was observed lying behind it and connected with the thoracic tumour which on section was found to consist of liver substance. These two liver masses were connected by a duct from each, which joined to form a common duct leading to the duodenum. A third small lobe of liver substance was found situated above on the left extremity of the lower lobe, being connected to it by a very narrow neck of liver tissue and surrounded by a fold of peritoneum. The weight of the tumour was 38 ounces, the smaller mass 23 ounces, and the smallest three ounces. The heart: the pericardium was adherent and very much thickened. The right auricle and ventricle were filled with ante- and post-mortem clots. The tricuspid valve admitted four fingers to the middle joint; there were old vegetations on the valve. The left ventricle was hypertrophied. The aortic valves were apparently normal. The lungs: on the right side the pleura was slightly adherent to the chest wall. The lower and middle lobes were collapsed, the upper being emphysematous. On the left side the pleura was extensively adherent to the chest wall. The lung was emphysematous, the lower lobe being œdematous. The spleen was very small; it measured three inches by one inch.

We are indebted to Dr. M. Bannister for his kind permission to publish this case.

Blackburn.

THE CELL AS A FACTOR IN PHAGOCYTOSIS.

BY H. WANSEY BAYLY, M.A. CANTAB., M.R.C.S. ENG., L.R.C.P. LOND.,
ASSISTANT IN THE BACTERIOLOGICAL DEPARTMENT OF ST. GEORGE'S HOSPITAL; DIRECTOR OF THE OPSONIC DEPARTMENT OF THE CLINICAL RESEARCH ASSOCIATION.
(*From the Bacteriological Department, St. George's Hospital.*)

IN the paper on Phagocytosis read before the Medical Section of the Royal Society of Medicine on March 25th[1] Mr. S. G. Shattock and Mr. L. S. Dudgeon emphasised the importance of the rôle of the cell and demonstrated that it, as well as the serum, played a part of some importance. In July, 1907, with the view of endeavouring to ascertain whether fatigue lowered the power of resistance to infection by acting on the cell or the serum, I made 88 determinations of the tuberculo-opsonic index of 44 women in labour in Queen Charlotte's Lying-in Hospital, Marylebone-road, N.W. As the observation seems to suggest that the lowered resistance to infection in women during and immediately after labour may be due at least in part to want of avidity of the cell, I have thought that it might be of some interest to those who heard, or have since read, the interesting paper mentioned above.

With each patient's serum I made two determinations of the tuberculo-opsonic index, in the one case using the patient's own cells and in the other using my cells. I found, using my own cells, that in 39 cases the index was between 0 8 and 1·2. Of the remaining five cases three were above 1 2 and only two below 0·8, thus confirming Dr. G. T. Western's conclusion that fatigue does not lower the opsonic

[1] THE LANCET, March 28th, 1908, p. 933.

content of the serum. When the patient's own cells were used, however, the result was very different. In only 19 cases were the indices between 0·8 and 1·2; 25 were below 0·8 and none was above 1·2. Still more marked was the relation of the index found when the patient's cells were used to that found when my cells were used, for the index was lower with the patient's own cells in 38 cases and higher in only four, while in two the index was the same with both the patient's cells and my cells.

My thanks are due to Dr. C. Slater for the use of his laboratory and to Dr. A. F. Stabb for giving me access to his patients. The following list gives the period of labour at which the blood was taken and the two indices:—

Case.	Number of hours or days in labour when the blood was taken.	Hours after delivery when the blood was taken.	Index with patient's cells.	Index with control cells.
1	4 hours.	—	0·73	1·0
2	5 ,,	—	0·63	1·0
3	Short cervix.	—	0·93	0·86
4	,, ,,	—	1·0	1·16
5	,, ,,	—	0·8	1·0
6	—	1	0·8	0·8
7	21 hours.	—	0·9	1·1
8	9 ,,	—	0·6	0·9
9	7 ,,	—	0·83	1·27
10	15 ,,	—	1·15	0·71
11	—	6	0·77	1·04
12	3 days.	—	0·75	1·17
13	12 hours.	—	0·74	1·11
14	14 ,,	—	0·6	1·0
15	3 ,,	—	0·65	1·2
16	6 ,,	—	0·7	1·2
17	12 ,,	—	0·51	0·62
18	12 ,,	—	0·83	0·83
19	18 ,,	—	0·6	1·01
20	30 ,,	—	0·73	1·06
21	8 ,,	—	0·76	1·06
22	7 ,,	—	0·72	0·92
23	12 ,,	—	0·64	1·29
24	12 ,,	—	0·9	1·2
25	8 ,,	—	0·7	0·91
26	12 ,,	—	0·7	0·92
27	10 ,,	—	0·66	1·0
28	24 ,,	—	1·0	1·06
29	—	12	0·8	0·9
30	48 hours.	—	1·0	1·2
31	36 ,,	—	0·44	0·98
32	24 ,,	—	0·5	1·1
33	—	1½	1·0	1·3
34	8 hours.	—	1·16	1·18
35	—	7½	0·9	1·13
36	—	½	0·6	1·06
37	—	—	0·61	1·0
38	—	8	0·81	0·75
39	14 hours.	—	0·65	0·75
40	30 ,,	—	0·52	1·2
41	—	5	0·64	1·0
42	—	2	0·91	1·0
43	—	2	0·87	1·05
44	—	3	1·14	1·04

New Cavendish-street, W.

SANITARY INSPECTORS' EXAMINATION BOARD.—An examination for certificates of qualification for the appointment of sanitary inspector or inspector of nuisances under Section 108 (2) (*d*) of the Public Health (London) Act, 1891, will be held in London on Tuesday, May 5th next, and the four following days. An examination will also be held in Birmingham in June next if sufficient candidates notify their intention of presenting themselves before May 18th. Particulars of the above examinations will be forwarded on application to the honorary secretary, the Sanitary Inspectors' Examination Board, 1, Adelaide-buildings, London Bridge, London, E.C.

"CURES" FOR ASTHMA: FATAL CASE FROM AN OVERDOSE OF OIL OF SAGE.

BY HENRY T. M. WHITLING, M.B., B.S. DURH., M.R.C.S. ENG.

ON Feb. 7th last my partner, Dr. G. D. Laing, was called at 9.30 A.M. to a woman, aged 44 years, and on his arrival found her collapsed with cardiac failure and dyspnœa, after having taken about two teaspoonfuls of oil of sage. He injected strychnine hypodermically and she rallied and appeared better before he left. Later, at 11.30, I was called to her urgently since she was much worse, and we proceeded to her house together. On my arrival I found her undressed and lying on a bed, with a deeply cyanotic face, "air-hunger," and with epileptiform convulsions. The extremities were cold, the hands being peculiarly leaden-coloured; the heart was most irregular and too erratic to be counted but very quick. Though apparently dying, as I learnt that she had not vomited, I passed down the tube of a stomach pump and extracted about one and a half pints of fluid, smelling most powerfully of the characteristic odour of sage. Then I washed out the stomach with hot water until it returned perfectly clear, and pumped 8 ounces of hot milk, white of egg, and half an ounce of brandy into the stomach. The patient was wrapped in hot blankets and given plenty of air, while my partner again injected strychnine. She, however, died in convulsions about 2 P.M. I was shown a 4 ounce bottle of oil of sage from which 2 drachms had been taken.

A necropsy, limited to the trunk, was performed by myself and Dr. Laing on Feb. 11th, and we found the heart to be normal, the muscle well developed, and no valvular disease or degeneration. The lungs were emphysematous; no tubercle was present. There was some engorgement at the bases; no bronchitis was present. The stomach was dilated; only some of the milk which had been injected was left. There was no strong smell of oil. Patchy ecchymosis was present along the greater curvature towards the pylorus; there were no ulceration, perforation, &c. In the intestines there was patchy ecchymosis of a similar character extending along the mucous membrane for from 2 to 3 feet only, and there was a strong smell of sage. The liver was normal; no signs of alcoholism were present. The kidneys were normal. The uterus was normal; the woman was not pregnant.

This woman was a sufferer from chronic asthma and had been recommended by a friend to take one drop of oil of sage, gradually increased to five drops, in two teaspoonfuls of brandy every morning for 14 days. By some blunder two teaspoonfuls of oil of sage were considered by the victim to be the dose, and the first dose taken ended fatally as above. The peculiarity of the case is that so far as my personal efforts have been able I can find no other fatal case of poisoning by oil of sage in England, though a considerable number of records have been searched. Moreover, it is extremely difficult to procure, one very large and eminent firm of chemists in the Midlands never having stocked or sold it. Sage "tea" (decoction) is generally used in the country for "fevers," "chest" complaints, and for uterine derangements. As regards the latter, it is credited with an action of an abortive, so we had to be certain that this woman was not pregnant, as in large doses of these oils there may be, and often is, an ulterior motive beyond a cure for chest troubles. In this case there was no pregnancy, nor did she or her husband ever suspect it.

The composition of oil of sage has kindly been supplied to me by Messrs. Burroughs and Wellcome, to whom I am also greatly indebted for looking up notes on its therapeutical action. I quote the following account of its pharmacology from the nineteenth edition of the "United States Dispensatory."

SALVIA (SAGE).

Both these and the flowering summits have a strong fragrant odour, and a warm, bitterish aromatic, somewhat astringent taste. They abound in a volatile oil, which may be obtained separate by distillation with water. Muir (J. Chem. S., 37, p. 678) found it to contain a terpene boiling at 150° C. (312·8° F.), another boiling at 171° C. (339·8° F.) thujone, $C_{10}H_{16}O$, a liquid boiling at from 197° to 203° C., and ordinary camphor, $C_{10}H_{16}O$. In the fresh oil the first terpene predominates. On standing, the amount of thujone increases, and then the camphor. The oil from the English leaves contains only a sesquiterpene $C_{15}H_{24}$, of the boiling point 260° C. (500° F.). Wallach (Ann. Ch. Ph., 1889) states that the first portions contain pinene and cineol but the greater portion consists of thujone, $C_{10}H_{16}O$ (formerly called salviol). Ferrous sulphate strikes a black colour with infusion of sage.

Uses.—Sage unites slightly tonic, astringent, and aromatic properties. By the ancients it was highly esteemed; it is at present little used, except as a condiment, but has been given in dyspepsia, also for colliquative sweats. The dose of the powdered leaves is from 20 to 60 grains (1·3 to 3·9 gm.). Dose of the infusion (1 oz. in 1 pint of boiling water), 2 fluid ounces (60 c.c.). According to Cadeac and Meunier (Lyons Med., May, 1891) the volatile oil of sage is a violent epileptiform convulsant, resembling in its action the oil of absinthe, but less powerful.

Dose.—From 20 to 60 grains (1·3 to 3·9 gm.).

The features of poisoning in this case are apparently characteristic of all essential oils. There appears strong inhibition of the pneumogastric nerve, resulting in a weak, feeble, and irregular heart beat and dyspnœa, these oils acting through the medulla. Epileptiform convulsions also arise and in this case became stronger before death. (Oil of eucalyptus likewise causes them.) The cyanosis was remarkable, however, and was most noticeable in the hands. Of all organs the *lungs* smelt most powerfully of sage. There was only that amount of ecchymosis in the stomach and intestine which would be expected from any irritant, as a volatile oil would be in such a dose; there was no erosion or perforation. In the *Lyons Médical* for May, 1891 (U.S. Dispensatory), M. Cadeac and M. Meunier report that five centigrammes of *essence* of sage injected intravenously into a dog produced epileptiform convulsions, and that 70 centigrammes (about 10½ grains) injected into a dog weighing 21 kilogrammes caused death after 35 epileptiform fits. The ordinary essence contains a proportion of 1 of oil in 4 of spirit (1 in 5), so that if 70 centigrammes of *essence* caused death in a dog of 21 kilogrammes (46 pounds) it would only be receiving intravenously a dose of about two minims. The woman weighed about 9½ stones (133 pounds), so that injected intravenously we might expect a dose of six minims to be fatal. In this case about 120 minims were taken and proved fatal, which, allowing for the difference between intravenously and per os, is a dose probably considerably over the amount necessary to cause death. From 30 to 40 drops by the mouth would generally cause severe symptoms, if not death, judging by the above experiment.

The oil which was the cause of this woman's death had in the first instance been imported from Austria. This is worthy of the remark that the English salvia officinalis only contains a sesquiterpene $C_{15}H_{24}$, whilst foreign salvia contains two terpenes, thujone $C_{10}H_{16}O$, and camphor $C_{10}H_{16}O$. The oil was analysed by two independent analysts (Messrs. Harvey and Wilkin and Mr. J. R. Richardson, Leicester) and was found normal. The specific gravity was 0·9229. Optical rotation + 13·6° in 100 millimetres. Two volumes of 80 per cent. alcohol, soluble.

It is a sad example as to how the public lose their lives in endeavouring to "cure" themselves by using "old women's" remedies and "quack" medicines instead of attempting to obtain relief through the proper and more scientific channels. This genuinely comes under the first head, the deceased having obtained her muddled-up "prescription" through a neighbouring old woman.

Husbands Bosworth, Rugby.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTE ON A CASE OF INJURY TO THE BLADDER DURING AN OPERATION ON A STRANGULATED FEMORAL HERNIA.

BY T. P. LEGG, M.S. LOND., F.R.C.S. ENG.,
ASSISTANT SURGEON TO THE ROYAL FREE AND ITALIAN HOSPITALS; SURGICAL TUTOR AT KING'S COLLEGE HOSPITAL, LONDON.

A WOMAN, 33 years of age, was admitted to the Royal Free Hospital on Oct. 1st, 1904. For six years she had suffered from a femoral hernia for which a truss had been worn. During the last two years the hernia had been irreducible but had given rise to no other symptoms, and she had continued the use of the truss. On Sept. 26th she went for a long walk. On the next day vomiting began, accompanied by intense abdominal pain. The hernia increased in size and these symptoms persisted till she was admitted. For some years she had occasional frequency of micturition. She had been married three years and had two children. The hernia was larger during each pregnancy, and after the birth of the first child she had prolapsus uteri. On examination a strangulated left femoral hernia was found. The swelling measured 2½ or 3 inches in diameter; the skin over it was somewhat reddened. The abdomen was a little distended and peristalsis of the intestine was visible.

Operation was at once undertaken. In opening the sac, which was very thin, the intestine was incised. The wound was sewn up at once by a double row of continuous sutures. The stricture having been divided the intestine was replaced in the abdominal cavity. Whilst the sac was being dissected from its surroundings a cavity, lined by mucous membrane, was opened on the inner side of the sac. No urine escaped, but on passing a catheter per urethram it was quite evident that the bladder had been cut into. A little careful dissection made it possible to free the prolapsed portion of the bladder from the outer surface of the sac as high as its neck, which was then transfixed and closed in the usual manner. The aperture in the bladder was closed by a double row of sutures, care being taken that the inner row did not penetrate the surface of the mucous membrane and that the cut edges of the latter were brought into apposition. The prolapsed portion of the bladder was then replaced in the abdominal cavity and the hernial ring partially closed, a small drainage-tube being passed through it into the sub-peritoneal tissue. The external wound was sutured except where the tube came through.

The abdominal pain and vomiting ceased at once and the bowels were opened on the fourth day. For the first two or three days the urine contained some blood; at the end of a week the urine was normal. Slight suppuration occurred in the wound, but there was no rise in temperature and the highest pulse-rate recorded was 100; generally the pulse was 84 per minute. There was no escape of urine through the drainage-tube. The patient left the hospital on Oct. 22nd quite well except for a small sinus, from which a stitch was subsequently extracted. The wound then healed soundly.

There was nothing to suggest that the bladder was prolapsed through the crural canal and was adherent to the outer surface of the sac till it was opened. No unusual amount of thickening was detected and the wall of the prolapsed portion was not abnormally thick. A large portion of the bladder was prolapsed, because the cavity opened was very large and the catheter passed straight into it. The history of the prolapsus uteri is interesting, but whilst the patient was in the hospital and when seen afterwards there did not appear to be any such descent of the uterus. It is interesting also to note that the hernia became larger during each pregnancy and had been irreducible for two years. Possibly the pregnancies caused the bladder to prolapse through the crural ring and the irreducibility was due to the bladder coming down outside the sac. There was no suggestion that the size of the swelling varied according to the amount of urine in the bladder, and, as already stated, no urinary symptoms except occasional frequency of micturition were present.

Harley-street, W.

NOTE ON A CASE OF TETANUS SUCCESSFULLY TREATED WITH ANTITOXIN.

BY J. BASIL COOK, M.D., CH.B. VICT., D.P.H. CANTAB., M.R.C.S. ENG., L.R.C.P. LOND.,
SENIOR ASSISTANT MEDICAL OFFICER, KENSINGTON INFIRMARY.

THE patient in this case was a man, 64 years of age, who was admitted into Kensington Infirmary on August 5th, 1907, suffering from tetanus. The history was to the effect that he had to leave his work on July 31st owing to severe pain in the jaw and inability to open his mouth. On admission he presented an absolutely typical risus sardonicus. His teeth were tightly clenched and there were twitchings of the facial muscles. There was marked opisthotonos, the muscular rigidity being so great that by lifting the feet the whole of the body, with the exception of the head, could be raised from the bed. The arms were unaffected. Fluids only could be swallowed. There was a small abrasion on the left foot. The patient was quite conscious, he was perspiring freely, and his temperature was 98° F. He was given 15 grains of chloral hydrate and 15 grains of potassium bromide every four hours. On August 6th antitetanic serum obtained from the Pasteur

Institute was administered, 70 cubic centimetres being injected into the flank. For the next three days the patient's condition remained practically unchanged. On the 10th the legs were not quite so rigid. He improved daily until the 25th, on which day he complained of severe pain in his wrists, elbows, and knees, which were tender and swollen. He had also a well-marked antitoxin rash and his temperature went up to 100° F. These symptoms lasted for three days and then subsided. The patient made a complete recovery.

It is interesting to note that this is the third case of tetanus which I have successfully treated with antitoxin.

My thanks are due to Dr. H. P. Potter, medical superintendent of the infirmary, for permission to publish the notes of this case.

Kensington.

A CASE OF STRANGULATED LEFT INGUINAL HERNIA CONTAINING CÆCUM AND APPENDIX.

BY C. E. RUSSEL-RENDLE, F.R.C.S. EDIN.,
ASSISTANT SURGEON, SOUTH DEVON AND EAST CORNWALL HOSPITAL.

A MALE infant, nine months old, was admitted into the South Devon and East Cornwall Hospital on April 23rd, 1907, with a strangulated left inguinal hernia. There was a history of a "lump" occasionally visible in the left groin for some two months previously; four days prior to admission it had failed to disappear and the child had been taken to the out-patient department where the hernia had been reduced. On admission there was a fairly large lump on the left side of about the size of a bantam's egg, presenting the usual signs of strangulation. This had lasted for five hours. Under chloroform the usual operation was undertaken. The first loop of bowel that appeared was small intestine but more remained behind, which on investigation proved to be part of the cæcum with an appendix nearly three inches long showing signs of previous inflammation. The appendix was removed, the bowel was reduced, and the canal was closed with mattress sutures of chromic gut. The patient went out perfectly healed on May 30th. Three weeks later he was readmitted with a hernia (not strangulated) on the opposite side. There had been no previous history nor had any signs of a hernia been seen during his stay in hospital. A radical cure was performed on June 24th and the child left the hospital three weeks later. Both herniæ were of the acquired variety, neither testis being seen, but each in its proper place in the scrotum.

Remarks.—A left-sided hernia of cæcum and appendix is an extremely rare condition, especially in so young an infant, and on this account I thought the case worth recording. In 1891 a case of appendix and cæcum in a left femoral hernia in a woman, aged 58 years, occurred in St. Bartholomew's Hospital, and is recorded in Vol. XXVII. of its reports. Mr. W. McAdam Eccles also quotes a case under the care of Thiery where the appendix alone was found in the left inguinal hernia in a male, aged 58 years, but these are the only two cases that I can find. There was no transposition of viscera and therefore I assume that the meso-cæcum was unusually long, although I could not demonstrate it at the operation. It was curious, also, that a hernia should develop on the opposite side so suddenly and so soon after the first one had been dealt with.

Plymouth.

ROYAL INSTITUTION.—The following are among the lecture arrangements after Easter: Professor F. T. Trouton, two lectures on (1) Why Light is Believed to be a Vibration, and (2) What it is which Vibrates (experimental course); Professor William Stirling, two lectures on Animal Heat and Allied Phenomena; Mr. W. Bateson, three lectures on Mendelian Heredity; and Dr. Alexander Scott, three lectures on the Chemistry of Photography (experimental course). The Friday evening meetings will be resumed on May 1st, when Professor Joseph Larmor will deliver a discourse on the Scientific Work of Lord Kelvin (with experiments and typical apparatus illustrative of his discoveries and inventions). Succeeding discourses will probably be given by, among others, Dr. J. Y. Buchanan, Dr. H. T. Bulstrode, Professor Kapteyn of the University of Groningen, and Professor Sir James Dewar.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

THERAPEUTICAL AND PHARMACOLOGICAL SECTION.

Hypnotism.

A MEETING of this section was held at the Apothecaries Hall, Blackfriars, on March 24th, Dr. T. E. BURTON BROWN, the President, being in the chair.

Dr. JOHN MILNE BRAMWELL delivered an address on Hypnotism. He described the gradual evolution of hypnotic theory from the time of Elliotson and the later mesmerists to the present day. Mesmerism, Dr. Bramwell pointed out, was the first anæsthetic, and hypnotic anæsthesia was still occasionally induced at the present day. At the same time he regarded this as being more of scientific than practical interest, for only a limited number of persons could be hypnotised deeply enough for operative purposes. Dr. Bramwell gave an account of his own work and drew attention to the fact that formerly his proportion of successes had been greater when he was able to choose his cases from amongst the patients of his own general practice. At present, when the cases sent to him were almost invariably long-standing ones in which other methods of treatment had been tried without success, his difficulties were considerably increased. Still, even in such cases, success was often striking and sometimes rapidly obtained. Dr. Bramwell described the methods which he adopted. He rarely found it necessary to induce deep hypnosis, but a restful, drowsy state seemed to favour the action of suggestion. Why suggestion administered in this form acted with more force than the suggestions of ordinary life he was unable to explain adequately, but the fact that this was the case came under his daily observation.

LARYNGOLOGICAL SECTION.

Exhibition of Cases and Specimens.

A MEETING of this section was held on April 3rd, Dr. JAMES BARRY BALL, the President, being in the chair.

The following cases and specimens were exhibited:—

Dr. W. JOBSON HORNE: An Autograph Letter by Johann Czermak.

Dr. JAMES DONELAN: 1. A Swelling of the Right Vocal Cord with a Projection at the Left Vocal Process in a phthisical woman. 2. Two cases illustrating the Effects of Neglected Adenoids.

Dr. STCLAIR THOMSON: Two radiographs showing the Value of X Rays in Sounding the Frontal Sinus. In one radiograph the probe had entered an ethmoidal cell; in the other it was, with the help of the x rays, passed correctly into the frontal sinus.

Dr. J. DUNDAS GRANT: A case of Thyrolingual Fistula successfully treated by electrolysis and excision; it had twice recurred after excision alone.

Mr. H. BETHAM ROBINSON: A specimen of Pedunculated Lymph-angeioma removed from the anterior commissure of the larynx of a man aged 35 years.

Dr. R. H. SCANES SPICER: A case of Papilloma of the Left Vocal Cord in a man aged 76 years.

Dr. A. STANLEY GREEN and Dr. H. LAMBERT LACK: A Smooth Red Sessile Growth, considered to be a tuberculoma, springing from the posterior laryngeal wall below the cords in a phthisical woman.

Mr. C. A. PARKER: A case showing great Nodular Infiltration of the Septum and Outer Wall of Both Nares of Uncertain Causation.

Dr. DAN MCKENZIE: A Suppurating Hæmatoma of the Septum, with a Fistulous Opening into the Gingivo-labial Fold.

Mr. P. R. W. DE SANTI: A case of Bilateral Swelling of the Septum Nasi.

Mr. W. H. KELSON: Bony Outgrowths from the Maxilla and Mandible in a man, aged 30 years. The case was generally considered to be one of leontiasis ossium.

Mr. CYRIL A. B. HORSFORD: A new instrument for passing a suture through the epiglottis to facilitate intralaryngeal operations.

Dr. H. J. DAVIS: 1. A case of Fibroma at the Junction of

the Posterior and Middle Thirds of the Left Vocal Cord. 2. A case of Cyst on the Floor of the Nose.

Mr. HERBERT TILLEY: A case showing the result of Killian's Operation on the Right Frontal Sinus, and of an Incomplete Killian's Operation on the Left.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF OBSTETRICS.

Exhibition of Specimens, &c.—Tuberculous Salpingitis.

A MEETING of this section was held on March 13th, Mr. E. H. TWEEDY, the President, being in the chair.

Mr. J. SPENCER SHEILL exhibited an Abnormal Placenta which showed a raised ring forming a complete circle about half way between the margin and the insertion of the cord, about two centimetres in depth and half that in thickness. The membranes were adherent to the margin of the placenta.

Dr. HENRY JELLETT exhibited a Table for Estimating the Date of Delivery from the Size of the Uterus. It was not, he said, intended for perfect accuracy, neither was it new. It was simply an arrangement of ordinary data to save time in calculating the date of delivery, as estimated by the size of the uterus, in cases in which the patient could not give a definite menstrual history.

Dr. R. D. PUREFOY read a paper entitled "Some Remarks on Tuberculous Salpingitis."—Sir A. V. MACAN said that there was a great difficulty as to the origin of primary tubercle of the tubes. If it did not ascend or descend they could only suppose that it filtered out from the blood. Sterility was one of the earliest effects of tubercle of the tubes, and he was not sure whether it would be much use to leave a small portion of the tube in such cases. He had at one time held the view that if they could not see their way to extirpate completely such affection of the tubes they had better leave them alone, but now he thought that they ought to remove as much as was possible and to trust to the patient's general strength to get rid of what was left behind.—Professor ALFRED SMITH, Mr. SHEILL, and others also took part in the discussion.

SECTION OF PATHOLOGY.

Exhibition of Specimens.

A MEETING of this section was held on March 20th, Dr. JAMES LITTLE being in the chair.

Dr. R. TRAVERS SMITH exhibited a specimen showing Perforation of the Œsophagus. The patient was a girl, aged 18 years, who was admitted to a hospital complaining that for three days she had had a sore throat and felt very ill. The sore-throat was said to have begun after the swallowing of a small piece of rasher bone. Nothing could be found in the throat except that the anterior parts of the throat were red and swollen. There was a slight general tumefaction of the neck externally but no particular enlargement of the glands. Her temperature was 104° F. and her respirations were about 35 per minute. On further examination he found a small area of cutaneous emphysema over the lower margin of the ribs on the left side and came to the conclusion that the piece of bone had probably perforated her œsophagus. A number of staphylococci were found in the blood, the emphysema became more marked, and he was able to make out some left pleurisy and a slight pericardial friction rub. On the fourth day in hospital she was unconscious and moribund. At the necropsy the emphysema was well marked; a small amount of pus and fibro-purulent material was found in the left pleural cavity, and there was, perhaps, some air in it; there were also some fibro-purulent pericarditis and emphysema in the abdominal cavity all round the left kidney. In the œsophagus, just below the level of the cricoid cartilage, there was a double perforation, one hole being a little lower than the other. No distinct abscesses had formed. There was no sign of a bone to be found anywhere; it had probably become softened and made its way downwards and was possibly subsequently discharged.

Dr. G. PEACOCKE showed a specimen of Cirrhosis of the Liver from a woman, aged 46 years, who had always lived a temperate life. For 12 months she thought she had been getting stouter but did not complain of illness until a fortnight before admission to a hospital. When in the hospital she was suffering from extreme respiratory distress; her abdomen was enormously distended and tense and the abdominal wall was œdematous; the lungs, too, were œdematous. The apex beat of the heart was heard in the third space and a systolic murmur was heard over it. The urine was very scanty, high-coloured, and slightly albuminous. The distension was due to fluid which had come on with great suddenness. The abdomen was opened and drained, 14½ pints of fluid being measured, apart from a considerable amount which escaped. Drainage was continued for 48 hours, three to four pints being measured daily. She remained with slight elevation of temperature for a few days and then became duller, finally lapsing into coma for 48 hours, and then dying. The surface of the liver was nodular and extremely hard and a microscopic section showed very advanced cirrhosis. The case was interesting from the fact that it showed that the use of alcohol was not necessary to the condition.—Dr. WILLIAM R DAWSON said that the contention that cirrhosis of the liver and alcoholism were not directly related was borne out by a converse observation. It had been pointed out by the late Dr. Conolly Norman and by Dr. F. W. Mott, of the London County Asylums, that cirrhosis was rare in asylum necropsies, although a large proportion of the cases admitted to pauper asylums were alcoholic.

Professor O'SULLIVAN exhibited a specimen showing a form of Aortitis associated with Sudden Death. Some years ago he had received the heart of a young soldier who had dropped dead on the march. He was apparently perfectly healthy. The appearance of the heart struck him as being very unusual and he observed that immediately above the commencement of the aorta, along the line of the valves, there was an abrupt rise in the surface level which continued for about an inch upwards into the vessel and then as abruptly descended again, forming a sort of table-land across the vessel a quarter of an inch or more higher than the rest of the surface. The left coronary artery was obstructed by the excrescence of the surface, which he took to be the cause of death. The specimen had gone astray but he was able to exhibit a similar specimen from a young man who had been found dead a few days before in a lavatory. The condition of his heart was almost identical with that of the other case. There was very little degeneration compared with an ordinary case of atheroma. The amount of overgrowth of the inner coat of the vessel, as compared with the amount of degeneration, was enormous. The orifice of the right coronary artery was practically closed; the opening of the left coronary artery was also reduced to small dimensions. A small depressed area, about an inch from the sinuses, was stained red and found to have undergone a different degeneration from atheroma. Under the microscope was seen a great rise in the inner coat, composed of a reduplication of the inner tissue, but in the middle coat the elastic tissue was cut and torn, and split by masses of cell infiltration which ran along the course of the vasa vasorum. The natural conclusion was that both cases were syphilitic although there was no direct evidence.

Dr. THOMAS G. MOORHEAD exhibited a specimen of "Surgical Kidney" taken from a woman, aged 42 years. Two days previously to admission to a hospital she had a sudden shivering fit, with pain in the abdomen and vomiting. He found distinct crepitus at the base of the left lung and rigidity of the abdominal wall, which yielded slowly to pressure. Her temperature, appearance, and respiration became typical of acute pneumonia, of which she developed further distinct symptoms later. There was some pus in the urine, and the patient suffered from frequency of micturition, from which he concluded she had also some cystitis. The dulness in the left lung gradually increased, until about two-thirds of the lower lobe had become consolidated. Her temperature ran up to 104° or 105° F., and so remained for a fortnight. Her strength rapidly diminished and she died. Bacterial examination of the pus in the urine gave staphylococcus aureus, and the sputum gave a pure culture of the same. The abdominal organs were all found to be healthy with the exception of the bladder and kidneys. The former showed acute cystitis and the left kidney was enormously large and studded with abscesses. The left ureter was extended and acutely inflamed. The pus from the abscesses gave a pure culture of staphylococcus aureus. The thoracic organs, with the exception of the lung, were normal. The base of the left lung, instead of showing

resolving lobar pneumonia, was studded with small abscesses, and showed typical septic broncho-pneumonia; the pus of the abscesses showed the same organism. The origin of the trouble was the bladder. It was the first instance in which he had found the staphylococcus aureus producing the particular group of symptoms.

Dr. HARVEY exhibited specimens of Infective Mouse Tumours which were obtained originally from Dr. E. F. Bashford of the Cancer Research Laboratory and had been transplanted for five or six generations. They grew successfully in from 40 to 60 per cent of the mice inoculated. The tumour was found normally in mice; one tumour would be sufficient to inoculate 100 mice. The transplantations were generally difficult and it took some time for the tumour to accustom itself to the new race. In one case a tumour worked its way through the ribs.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held at Sheffield on March 27th, Dr. A. J. Wallace (Liverpool), the President, being in the chair.—A vote of condolence to Mrs. William Walter of Manchester on the death of her husband was moved by Mr. R. Favell, seconded by Dr. D. Lloyd Roberts, and supported by Dr. J. E. Gemmell and Dr. Martin, and was carried.—Dr. Miles H. Phillips (Sheffield) exhibited a specimen of Uterus Bicornis Unicollis, with atresia of the external os and absence of the vagina. The patient, aged 16 years, had enjoyed good health up to October, 1907, when she began to suffer from pain in the right iliac region, accompanied by some febrile disturbance. She had never menstruated. The specimen was removed by operation. Recovery was uneventful.—Dr. Lloyd Roberts (Manchester) showed a Vaginal Fibroma removed from a patient, aged 46 years, who had had six pregnancies. The labours had always been difficult. She complained of pain and difficulty in micturition and an irregular sanious vaginal discharge. The tumour, which had a sessile attachment to the left fornix of the vagina, was removed by enucleation.—Dr. H. Briggs (Liverpool) communicated a case of Acute Complete Inversion of the Uterus treated by manual reduction on the twentieth day after labour. The patient, aged 28 years, married four years, had had two miscarriages previously to the present full-term pregnancy. The labour was slow on account of premature rupture of the membranes and the delivery by forceps under chloroform occupied two hours. During the third stage fundal pressure had been used on account of severe hæmorrhage. For three weeks the patient had been nursed at home by a friend, during which period there had been febrile disturbance, the temperature being from 101° to 105° F., with a definite rigor on the day before admission to hospital, severe abdominal pain with profuse vaginal bleeding, dribbling and incontinence of urine. The catheter had been repeatedly used and a vaginal douche of lysol twice daily. No vaginal examination was made till the nineteenth day, when she was at once removed to hospital. On examination the enlarged inverted uterus lay in the vagina, its mucosa was slightly ulcerated, and the ring of cervix above was faint and sharp. Under ether the well-marked uterine cup became palpable bimanually and reduction was effected by continuous increasing pressure gradually exerted so as to raise the body of the uterus through the thin cervical ring without damage. A douche of sterilised water at 120° was then used. The reduction occupied 20 minutes. For the first seven days intra-uterine douches of sterile water were given twice daily. Convalescence was tardy, with febrile symptoms, the temperature being from 101° to 105°, including six rigors during the first three weeks. The patient left hospital eight weeks after the reduction of the inverted uterus.—Dr. Briggs and Dr. J. F. Edmiston narrated a case of Severe Concealed Accidental Hæmorrhage occurring in a patient, aged 26 years, 5-para, with a history of easy labours previously. At 11.30 A.M. on March 6th, 1908, three days short of the full term, the patient was seized with severe abdominal pain and vomiting. At 7.30 P.M. the collapse became grave; she was pallid, cold, and restless, with a thready intermittent pulse of 152, and a subnormal temperature. The physical signs of a tense, tender, full term uterus were present. Fœtal heart sounds were inaudible. Vaginally the cervix admitted two fingers, there was no bleeding, and the examining finger could reach neither placenta nor blood-clot. The membranes were unruptured and labour pains were absent. In this condition she was admitted to hospital and Dr. Briggs ordered ¼ grain of morphine and $\frac{1}{100}$th grain of atropine hypodermically at 9.30 P.M. This was followed by five hours' sleep and at 8 A.M. on March 7th the pulse had fallen to 120. Three hours later the same dose of morphine and atropine was repeated on account of restlessness, and sleep supervened. During the intervals of sleep small quantities of milk and soda-water, or milk and barley-water, were taken. The os now admitted three fingers. Shortly after midnight labour pains became pronounced and a speedy and spontaneous delivery was completed by 12.30 A.M. on March 8th. 2½ pounds of clot and about a pint of liquid blood were expelled. The fœtus, which appeared to have been dead about one week, weighed 7¼ pounds.—Dr. Phillips also related a case of Concealed Hæmorrhage during the Fifth Month of Pregnancy treated by vaginal hysterotomy. Recovery was good. The blood apparently occupied the decidual space and the amount of clot collected filled a two-pint measure.—Dr. Gemmell read a note on Primary Carcinoma of the Fallopian Tube based upon a recent case in which there was a history of profuse watery offensive vaginal discharge in a multiparous woman, aged 45 years. The physical signs led to a diagnosis of multiple fibroma uteri, with chronic inflammatory disease of the right appendage. Laparotomy revealed double chronic inflammatory appendage disease; right hydrosalpinx, left pyosalpinx. Subsequent examination of the specimen demonstrated that the left tube, which was closed at its fimbriated end, sausage-shaped, measuring three inches in diameter at the abdominal end and one inch at the uterine, contained pus and an enormously thickened mucous membrane, forming a papillomatous growth, microscopic sections of which showed the papillomatous growth to be adeno-carcinoma. Both ovaries were normal; the right tube showed simple salpingitis.

ULSTER MEDICAL SOCIETY.—A meeting of this society was held in the anatomical department of Queen's College, Belfast, on March 26th.—Professor J. Symington showed, by means of the lantern, a reconstruction to illustrate the Relations of the Deeper Parts of the Brain to the Lateral Aspect of the Skull, and specimens illustrating Dental Anatomy with X Ray Photographs of Developing Teeth, taken by Dr. J. C. Rankin.—Dr. P. T. Crymble demonstrated specimens of the Central or Rolandic Fissure of the Cerebrum, as well as various pathological specimens.—Dr. Thomas Killen and Dr. W. J. Maguire showed specimens of the Spinal Cord and Mid-brain to illustrate the order of medullation of fibres.—Mr. H. H. B. Cunningham showed specimens of Membrana Tympani and Tympanic Recesses.—Professor T. H. Milroy made a communication on Colour Fatigue.—Dr. J. A. Milroy showed a series of slides illustrating the microscopic structure of some of the organs of special sense.—Professor W. St. Clair Symmers and Dr. W. J. Wilson gave an account of (*a*) Agglutination of Organisms of the Typhoid, Colon, and Alkaligenes Groups by the Blood Serum of Cerebro-spinal Fever Cases; (*b*) Cerebro-spinal Meningitis due to infection with the typhoid bacillus, Gärtner's bacillus, and the anthrax bacillus; (*c*) Fermentative Powers of the Meningococcus and Gonococcus; and (*d*) Certain Differences between Young and Old Cultures of Meningococci.—Dr. Wilson also made communications on (*a*) Cerebro-spinal Meningitis due to infection with the micrococcus catarrhalis; (*b*) note on the occurrence of Gram-negative Cocci in Fæces; and (*c*) Pleomorphism exhibited by Gram-negative Cocci of the Catarrhalis (allied to influenza) Class.—Dr. Wilson and Dr. E. H. M. Milligan gave an account of an investigation of the Etiology of Typhus Fever by Blood Culture Methods.—Dr. D. P. Gaussen and Dr. T. Houston gave an account of a case of Streptococcic Septicæmia successfully treated by a vaccine prepared by Dr. Houston.—Dr. Houston and Dr. Rankin gave a demonstration of the Reaction of Meningococcic Serum.—Sir John Byers showed: (1) a Uterus with Tuberculous Pus Tubes removed from a young unmarried woman, aged 25 years; (2) Five Uteri with Fibro-myomata removed by Hysterectomy; (3) a Uterus with a Fibroid Tumour attached to its posterior wall and protruding partially into the Uterine Cavity removed by Hysterectomy (patient aged 50); (4) a Molluscum Fibrosum Tumour removed from the Clitoris; (5) a Fibro-cystic Uterine Tumour removed by Hysterectomy; (6) an Ovarian Tumour; and (7) a Hydrosalpinx and other Tumours of the Female Pelvic Organs. Sir John Byers also showed a series of Stereoscopic Photographs of Obstetric Conditions.—Dr. C. E. Shaw showed a water-colour drawing of Melanoma

of the Conjunctiva and Microscopic Sections of Tissue from the same, and also a series of sections illustrating varieties of Nasal Neoplasms.—Dr. J. W. Browne showed specimens of Sarcoma of the Upper and of the Lower Jaw and a Portion of a Spinal Cord illustrating Intramedullary Hæmorrhage.—Mr. G. L. St. George showed an Acranial Fœtus.—Mr. J. A. Craig showed an Eye with Melanotic Sarcoma of the Choroid.—Dr. J. S. Darling showed specimens of Hæmato-salpinx, Colloid Cancer of the Peritoneum, and of a Peculiar Intestinal Tumour.—Professor Symmers showed the Lungs and Intestines from a Guinea-pig into which he had injected Indian ink into the stomach by a catheter while it was alive; when killed afterwards there was no sign of the material in the intestines but the lungs were very much pigmented. The experiment was indirectly confirmatory of Calmette's and von Behring's that even when supposed to be inhaled the tubercle bacilli reach the lung through the stomach.—Dr. A. Dempsey, Mr. J. O'Doherty, Mr. A. Fullerton, Mr. T. S. Kirk, and others also showed specimens of interest.

LIVERPOOL MEDICAL INSTITUTION.—A meeting of this society was held on March 26th, Mr. Thomas H. Bickerton, the President, being in the chair.—The proceedings took the form of a clinical evening.—Dr. H. R. Hurter showed a man, aged 35 years, suffering from Acrocyanosis Chronica Anæsthetica (cum gangræna), a condition allied to Raynaud's disease and erythromelalgia.—Dr. R. J. M. Buchanan showed a case of Argyria in a man.—Dr. A. Gordon Gullan showed a man, aged 56 years, suffering from Raynaud's Disease. He had a previous attack eight years ago lasting for 12 months. The symptoms included a typically red congested face and a swollen purple (asphyxial) condition of the fingers, the toes, the soles of the feet, and the ears. Dr. Gullan also showed a case of Myxœdema occurring in a woman, aged 55 years. The disease had developed gradually since the menopause became established at the age of 50 years. The symptoms included swollen face, malar flush, glazed dry skin, large swollen tongue, spade-like hands, subnormal temperature, and infrequent feeble pulse.—Dr. Nathan Raw showed (1) a case of Lymphadenoma occurring in a boy, aged 14 years, without enlargement of the spleen; and (2) a case of Extreme Bradycardia, the average pulse-rate being 26.—Dr. J. Owen and Mr. Douglas Crawford showed two cases of Deformity of the Hands—namely, (1) the "main en griffe" type resulting from cervical caries; and (2) the reverse picture (flexion of proximal, extension of second and flexion of terminal phalanges), in a case of pneumoconiosis.—Dr. N. Percy Marsh showed a child suffering from Meningitis in whom Calmette's reaction was positive; the cerebro-spinal fluid contained lymphocytes and did not reduce Fehling's solution. The treatment consisted in the use of Koch's tuberculin (T.R.) and was followed by recovery.—Dr. G. G. Stopford Taylor and Dr. R. W. MacKenna showed (1) a case of Tuberculous Ulcer treated by Bier's vacuum method; (2) a case of Lupus affecting the gums and hard palate; and (3) a series of Radiographs showing mercury lying in the tissues at varying intervals up to three weeks after intramuscular injections of grey oil.—Dr. A. Nimmo Walker showed a case of Glaucoma treated by Cyclotomy.—Mr. Hugh E. Jones showed a case of Chronic Suppurative Otitis Media with Granulations. The symptoms included headache, giddiness, pain, diplopia, and optic neuritis. A watch was heard on pressure only, the bone conduction being exaggerated. The complete post-aural operation was performed and was followed by the disappearance of all pathological symptoms and return of hearing.—Dr. John Hay showed two cases of General Paralysis of the Insane occurring in women, aged respectively 39 and 48 years, neither of whom had a history of syphilis.—Other cases were shown by Dr. W. B. Warrington, Dr. C. J. Macalister, Mr. R. W. Murray, Mr. R. C. Dun, Dr. Leslie Roberts, Dr. F. H. Barendt, and the President.—Mr. G. G. Hamilton gave a demonstration of Lumière's Colour Photography as applied to fresh pathological specimens. Illustrations were provided by 70 lantern slides, including human and comparative pathology.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on April 3rd, Dr. W. Langdon Brown, the President, being in the chair.—Mr. Elmore W. Brewerton read a paper on Injuries to the Eye with special reference to Sympathetic Ophthalmitis. He said that the commonest injury without penetration was caused by a blunt instrument such as a tennis ball, which caused immediate loss of sight and hyphæmia. The hyphæma usually cleared up in about a week; but too good a prognosis ought not to be given as traumatic cataract might result and the lens might be dislocated into the anterior chamber. Hæmorrhage into the vitreous was another common cause of temporary loss of sight but the patient usually recovered. Any penetrating wound might produce sympathetic ophthalmitis which might be defined as a plastic inflammation of the uveal tract subsequent to a plastic uveitis in the other eye due to injury. The modern theory of the pathology of sympathetic ophthalmitis was that it was due to the infection of a non-pyogenic organism, not yet isolated, which could not live in the presence of other pyogenic organisms. Many cases were caused by the iris getting entangled in the wound after cataract extraction. The rapid appearance of suppuration in an eye after an injury did not set up sympathetic ophthalmitis. The earliest sign of sympathetic ophthalmitis was the presence of hippus in the sympathising eye and one of the earliest symptoms was an accommodating asthenopia followed by lacrymation and pain which were characterised by marked exacerbations. As regards prophylaxis it was an axiom never to advise an intraocular operation unless it was absolutely necessary. As regards treatment, all injured eyes with no perception of light should be removed, and if a foreign body in the globe could not be extracted the eye should be removed. In doubtful cases the eye could be left in for 10 or 11 days without danger as the organism took about two weeks before it could develop in sufficient power to attack the other eye. If the eye was not quiet three weeks after the injury it should be removed. For the treatment of the sympathising eye mercury should be used till it caused mild salivation. The eye should be fomented and covered up and atropine used to keep the pupil dilated. For the pain dionin should be given and morphine if necessary.—Dr. A. L. Marshall related a case of Rupture of the Aortic Valve. A year ago a man, aged 42 years, who for six years had a soft mitral bruit, fell on the ground while running to catch an omnibus. He experienced no inconvenience whatever but complained of a loud noise in his chest. On examination, the apex beat was found in the fifth interspace inside the nipple line, the impulse was good and not heaving, and a loud diastolic bruit was heard all over the chest wall. The pulse was water-hammer in character but regular and full. The patient gradually got worse, but after four months' rest was able to resume his work which was very harassing. He had a troublesome cough which persisted in spite of all treatment and he could not sleep. Seven months after the accident the apex beat was in the sixth interspace, one inch outside the nipple line, and the impulse was diffuse. The pulse was soft and extremely easily compressible. On raising the arm upwards and outwards the radial pulse ceased. The aortic bruit extended up into the carotids and down to the femorals. He became rapidly worse and there was a large hæmorrhagic infarct of the left lung followed by pain in the chest and extreme shortness of breath and he died nine months after the accident.—Dr. Alexander Morison said that many reported cases of rupture of the aortic valve had been shown to be cases of compensated heart disease which had given way under a severe strain.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on April 1st, Dr. L. W. Marshall, the President, being in the chair.—Dr. F. H. Jacob and Dr. J. H. Thompson showed a youth, aged 18 years, who had been the subject of Acute Pneumonic Phthisis involving the whole of one lung 15 months before. Complete recovery had taken place, although the febrile temperature persisted for three months and the case at first appeared too hopeless to warrant admission to a sanatorium.—Dr. Jacob also showed an infant, aged 16 months, the subject of Multiple Tuberculous Gummata, the sequelæ of measles a year before.—Dr. M. Parry-Jones (Derby) read a paper on Diachylon Poisoning. The first case described by him was that of a woman, aged 34 years, admitted to hospital as doubtful enteric fever, with a three weeks' history of headache and diarrhœa. The temperature dropped from normal to subnormal and the pulse from 80 to 60. Weakness of leg and wrist muscles without wasting developed into dysphagia and coma but there was no optic neuritis. Alcoholic disease of the liver no doubt contributed to the fatal issue. A second case, in a woman, aged 24 years, proved fatal a few hours after her admission in a helpless semi-comatose condition. A third case, after running a most critical course, recovered in three or four months' time, with loss of memory and partial aphasia. These might in part be attributed to an exploration of the temporo-sphenoidal lobe, undertaken at one stage in

the illness when double optic neuritis, pyrexia, paralysis of one external rectus and a misleading history of otorrhœa suggested a latent cerebral abscess. Relief of tension thus brought about greatly assisted recovery. In two out of the three cases no pregnancy existed and Dr. Parry-Jones urged that lumbar puncture or trephining must be resorted to when necessary.—The paper was discussed by the President, Dr. C. H. Cattle, Dr. Jacob, Mr. W. Tibbles, Dr. A. J. Sharp, and Dr. Thompson, and Dr. Parry-Jones replied.—Dr. Cattle read notes of a case of Embolism of the Abdominal Aorta occurring in a man, aged 39 years, the subject of mitral stenosis. It was probable that embolism of the right common iliac artery occurred six days before the graver event and led up to it, as pain occurred in the iliac region accompanied by a rise of temperature to 101° F. Later paralysis and anæsthesia of both lower extremities occurred with absence of patellar and plantar reflexes, then livid mottling of the inner side of the right thigh, and both limbs became pulseless. Hæmaturia and albuminuria also ensued and death occurred a day later. The case was discussed by the President and Dr. J. Watson.—Dr. Parry-Jones related a case which had come under his notice and ended fatally ten days after the onset, and Dr. Cattle replied.—Dr. Sharp showed two specimens of Psammoma from the choroid plexuses of the brain with microscopic sections.

MIDLAND MEDICAL SOCIETY.—A meeting of this society was held on March 25th, Dr. Justin M. McCarthy, the President, being in the chair.—Mr. H. Gilbert Barling and Dr. A. Stanley Barnes showed a man who had been successfully operated on for Cerebral Tumour.—Mr. Barling showed a middle-aged man upon whom he had performed Interscapulo-thoracic Amputation for a mixed round- and spindle-cell periosteal sarcoma developing the upper two-thirds of the humerus and encroaching slightly upon the capsule of the shoulder-joint. The patient has remained free from recurrence. He mentioned that he had resorted to this amputation in three other cases of sarcoma of bone, all the patients recovering from the operation. The first patient suffered from a myeloid sarcoma of the humerus of four years' duration and generalisation of the growth occurred a few months after operation. The second case was that of a girl with a fungating myeloid sarcoma of the scapula. This patient remains well eight years after the amputation. The third case was that of a girl with a periosteal round-celled sarcoma of the supraspinous portion of the scapula. This patient remains well two years and three months after the amputation.—Mr. Barling also showed a boy in whom he had excised the upper third of the humerus for an early Myeloid Sarcoma which had produced spontaneous fracture. It was still practically confined within the limits of the bone. The operation was performed 15 months ago and the patient remains quite well.—Mr. Jameson Evans showed a man whose condition was regarded as one of Infantilism, with some superadded Intracranial Lesion.—Dr. Smallwood Savage showed a specimen of an Unruptured Tubal Molar Pregnancy, diagnosed before operation. Pathologically the right Fallopian tube was seen to be swollen about the middle of its length by a fusiform bulging. The fimbriated extremity was seen to be patulous. The ovary was enlarged by a follicular cyst of the size of an egg. The special point of interest in the specimen was to be seen in the section of the tube at the site of the swelling, for both by the naked eye and by microscopical section the tubal mole was shown to be situated in the tubal wall and outside the lumen. The explanation of this condition was to be found in the trophoblast of the growing ovum, which, by its eroding action on the maternal tissues, had travelled from inside the lumen, at the site of its implantation, into the muscularis and between the external and internal layers of muscle. It is generally held that the trophoblastic action is invariably the essential cause of the rupture of a tubal pregnancy, as it has been shown by the imperfect decidual production in the tube that the maternal resistance to the trophoblast is weak. Good recovery followed.

HUNTERIAN SOCIETY.—A meeting of this society was held on March 25th, Mr. F. Rowland Humphreys, the President, being in the chair.—Dr. J. H. Sequeira gave a demonstration of patients illustrating various forms of Tuberculosis of the Skin. He divided the cases into two groups—those in which the tubercle bacillus had been demonstrated and those which were believed to be due to circulating toxin produced at some distant tuberculous focus. The first group was illustrated by cases of lupus vulgaris of the skin, nasal mucous membrane, palate, and tongue; by scrofulodermia following caries of the teeth and mandible with sinus. He also showed a case of pseudo-elephantiasis of the leg with tuberculous lymphangitis and an interesting case of verruca necrogenica, infected probably from tuberculous meat. In the second class, the so-called tuberculides, he showed a case of lichen scrofulosus in a patient suffering from lupus of long standing; a case of symmetrical necrosing tuberculides—acnitis and folliculitis of some authors; and one of erythema induratum of Bazin.—Dr. W. Langdon Brown and the President discussed the cases.

ERRATUM.—The word "purpose" should be substituted for *operation* in the second resolution passed by the Medico-Legal Society on March 24th, and reported in our last issue (p. 1008).

Reviews and Notices of Books.

An Introduction to Child Study. By W. B. DRUMMOND, M.B. Edin., F.R.C.P. Edin., Assistant Physician to the Royal Hospital for Sick Children, Edinburgh. London: Edward Arnold. 1907. Pp. 348. Price 6*s.* net.

The Child's Mind: its Growth and Training. By W. E. URWICK, M.A. London: Edward Arnold. 1907. Pp. 269. Price 4*s.* 6*d.* net.

WE take these two works together, for they are in a certain sense complementary. By child-study is meant the study of children by the methods of modern science. It has most important bearings upon social and political questions. The real aim of education should be not mere instruction in subjects but the development of the mind. Herbert Spencer reproached the Englishman or studying his horses and neglecting his children but it appears that in 1570 Roger Ascham made use of the same comparison. After Dr. Drummond has dealt with the kind of preparation required by the person who pursues child-study and has given certain cautions in carrying on the study there are interesting chapters on biology and child study dealing with the consciousness of children, evolution, and Darwinism in the nursery. The last is illustrated by traces of our prehuman ancestors still surviving in the nursery and even persisting to a later period, what are called the monkey traits of children, e.g., the movements of the thumb, the furrow or flexion fold on the sole of the foot in children, the turned-in position of the feet at birth, the clasping and climbing power, and many innate and hereditary instincts. As to the methods themselves history and literature help. There is the approach through educational theories and methods but the chief is the direct study of children themselves, and this may be done by (1) biographical studies of individual children; (2) anthropometric methods; (3) experimental methods; (4) direct questioning; and (5) the syllabus method. Dr. Drummond provides such a syllabus for testing the observing powers, memory tests—visual imagery—money sense, vocation, ideals, reasoning powers, and so on (pp. 86-92). Full directions are given as to how to study a baby (pp. 93-108) and these seem to be full and explicit. Then follows a chapter on the weight of babies and a most interesting one deals with some facts of growth. There is a careful account of the senses and the nervous system and the health of the child, and an important chapter on fatigue embodies the results of Mosso's investigations. The instincts and interests of children are discussed in a thoroughly interesting manner, while under "forms of expression" the leading facts of the physiology of speech—or baby linguistics—are set forth. The moral characteristics are dealt with, and finally there is a discussion on religion and the child and on peculiar and exceptional children. Obviously the author is in love with his subject and he sets forth his ideas in a clear, precise, and convincing form.

The book ought to prove most valuable to teachers and to medical men.

Mr. Urwick's work is an attempt to set forth in simple, untechnical language some results obtained from a study of the growth of the mind as an organic process and to establish a clear and definite connexion between those processes of learning which the mind possesses and the methods by which it should be taught and trained. The school is intended as a short cut to prepare the pupil to take his place in the society to which he belongs but it does not undertake to prepare for life under any ideal conditions but for life under the actual conditions, hence there can be no ideally best curriculum or school. Education should prepare for the daily work or calling as well as for the sphere of social life. Some of the most interesting chapters are those on learning and the growth of ideas, the growth of ideas in imaginative processes, and reasoning as mind's higher processes. The work is one replete with interest and should be read by every teacher because of its suggestiveness.

Handbook of Meat Inspection. By Dr. ROBERT OSTERTAG, Professor in the Veterinary High School of Berlin. Authorised translation by EARLEY VERNON WILCOX, M.A., Ph.D., Veterinary Editor, Experiment Station Record. With an introduction by JOHN R. MOHLER, A.M., V.M.D., Chief of Pathological Division, United States Bureau of Animal Industry. Third edition, with coloured plate and 260 illustrations. Royal 8vo. London: Baillière, Tindall, and Cox. 1907. Pp. 884. Price 31*s.* 6*d.* net.

As an authority on this subject Dr. Robert Ostertag holds the first rank and has been quoted on all sides and in almost every work dealing with meat-supply and with slaughter-houses. Earlier editions of his works have been noticed in these columns and we are now pleased to welcome an authorised and carefully produced translation. The author was consulted at different stages of the translation and has made certain alterations, so that the information given should coincide with the actual state of the law on the inspection of meat in Germany. Moreover, Mr. John R. Mohler contributes a very useful chapter describing similar legislation in the United States of America. We are thus able to see that while in Great Britain a large amount of American meat has been consumed, no action whatever was taken to protect the British public—it was Italy that took the initiative. The example of Italy being closely followed in 1881 by Austria, Germany, and France, the United States, to save their trade with Europe, began to enact laws for the inspection at least of such meat as was to be exported to those countries. Then follows the history of the gradual improvement of these laws and of the methods for the recruiting of the staff of inspectors whose duty it is to carry out the laws. It is obvious, however, from the figures given that though the number of inspectors of meat appointed by the Federal Government has of late been greatly increased the staff is still quite inadequate.

The greater part of the work deals in detail and with the aid of numerous illustrations with the various diseases found in animals used for food, including fish. All that bacteriology and the study of the life and habits of parasites can contribute to the great practical purpose of preserving the public from unwholesome food is treated in full detail. This, of course, includes a special study on the important question of tuberculosis and the difficult problem of deciding how far the disease is so completely localised as to allow some of the meat to be sold as food. The gravity of this question may be judged from the fact that the author says: "It must be assumed that tuberculosis may be transmitted to man by the consumption of tuberculous organs." He states that the bacillus in man and in animals is the same and that the disease has been transmitted experimentally from man to cattle, hogs, and sheep. Also, cases are known where men have contracted through the skin tuberculosis from domesticated animals, notably in milking cows with tuberculous udders. Where the tuberculosis is undoubtedly localised the meat is considered harmless. But Dr. Ostertag considers as "probably possessed of a harmful character to a high degree" all cases of generalisation with tuberculous changes in the "musculature, bones, joints, and lymphatic glands of the muscles, and also all cases of fresh generalisation with tumefaction of the spleen and all the lymphatic glands."

There are also many pages devoted to processes of preservation of food and to the detection and prevention of adulteration. Altogether we think that this is a volume that will prove of great practical service to those who are engaged in the endeavour to prevent any but wholesome food being placed on the market.

Medicine in the British Isles. By NORMAN MOORE, M.D. Cantab. Being the Fitz Patrick Lectures for 1905–1906. Oxford: At the Clarendon Press. 1908. Pp. 202. Price 10*s.* 6*d.*

THESE admirable lectures, an abstract of which appeared in our columns at the time of their delivery, will be read with delight by every medical man who cares to know anything of the history of his profession. Dr. Moore is well known as one of the most learned members of the Royal College of Physicians of London and has only recently passed on the torch received from his accomplished predecessor, Dr. J. F. Payne, to the no less careful keeping of Dr. L. G. Guthrie. The founder of the lectures would indeed rejoice could he know by what skilled minds his bequest has been carried out.

Of the four lectures the first deals with medical study in London during the Middle Ages and is mainly devoted to the life and writings of John Mirfield who flourished in the fourteenth century and who was a canon regular and a medical man attached to the Priory of St. Bartholomew, although he was not apparently definitely attached to the hospital. He was a widely read and "a laborious and high-minded man, anxious to do all in his power for his patients and to instruct others how to relieve suffering." The second lecture deals with the education of physicians in London during the seventeenth century and the chief point which strikes the reader is that although anatomy, physiology, and other studies germane to medicine had advanced enormously since the Middle Ages, yet treatment remained much where it did. Dr. Moore gives an amusing account of one Simon Ludford who was ploughed by the College of Physicians and who afterwards tried to obtain a licence to practise from both Oxford and Cambridge without success. Whatever Ludford's medical attainments were his Latin verses were appalling. The copy of Sapphics which Dr. Moore quotes would certainly have been "torn over" had their author been at Eton. The third and fourth lectures treat of the history of the study of medicine in the British Isles and are worthy of the attention of every medical man. Especially interesting as being information unknown to most readers are the sections dealing with the study of medicine in Ireland. We have derived much pleasure as well as profit from reading these lectures and cordially recommend our professional brethren to read them also.

LIBRARY TABLE.

Organic Chemistry, including Certain Portions of Physical Chemistry, for Medical, Pharmaceutical, and Biological Students. By H. D. HASKINS, A.B., M.D., and J. J. R. MACLEOD, M.B. Aberd., D.P.H. Cantab. New York: John

Wiley and Sons. London: Chapman and Hall, Limited. 1907. Pp. 367. Price 8s. 6d. net.—The authors of this text-book have evidently taken pains to confine so far as possible the treatment of the subject to that part of it which bears on medical science. They have been mindful also of the important developments of physical chemistry which are related to certain bio-chemical phenomena. Thus, we find sections on the nature of solutions, osmotic pressure, ionisation, colloidal solutions, and so forth. The experimental directions are admirably clear and the experiments are well chosen. The book closes with a capital though somewhat short chapter on alkaloids and drug principles. If there is any fault to be found at all it is the extremely concise way in which the complete subject is treated.

Schema des Rumpfes. (Outline Diagrams for Clinical Records.) By Privat-dozent Dr. W. HILDEBRANDT. Munich: J. F. Lehmann. Price 1 mark 20 pfennig.—This is a set of 21 diagrams each on a page measuring 5 by 8 inches and provided with a perforated line for easy tearing out. The design differs considerably from that of the clinical diagrams commonly used in England. No part of the patient's arms is shown, but the closed surface formed by the ribs is supposed to be divided in a vertical line near the vertebral column and flattened out so that the same diagram shows both the front and back of the thorax, with the ribs, sternum, clavicles, vertebral column, and scapulæ; the whole circuit of the pelvis is also shown in a similar fashion, attached to the thorax by the vertebral column. Inside the cover there is printed a scheme of conventional lines or hatching to represent various degrees of dulness on percussion, thoracic mobility, and other physical signs.

Valentin's Practical Chemistry. By W. R. HODGKINSON, Ph.D., F.R.S. Edin., Professor of Chemistry and Physics in the Ordnance College, Woolwich. Tenth edition. London: J. and A. Churchill. 1908. Pp. 476. Price 10s. net.—There are some novel features in this work, notably the admirable reproductions of photographs, or rather micro-photographs, of sections of metallic alloys, by Mr. A. H. Coote, B.Sc., and the simplicity of the directions given by the author for the carrying out of simple experiments with the metals and their salts. The plan of the work reminds us of the text-books published in the "eighties," before the days of argon, helion, radium, or of "ions." The reactions of salts bear, therefore, no construction in the light of modern theory. The book, in fact, deals essentially with practical matters, such as the preparation of gases, the reactions of acids, bases, salts, alkaloids, and volumetric analysis. The metals are grouped according to the classic fashion of the older text-books. The information and descriptions may be found in most books of the kind but we have no doubt that Professor Hodgkinson's book is designed to meet the particular requirements of his own pupils, by whom, no doubt, it is appreciated.

The Schoolmaster's Year-book and Directory, 1908. London: Swan Sonnenschein and Co., Limited. Pp. 590. Price 7s. 6d. net.—This is an invaluable work of reference for those connected with scholastic circles and is arranged in three parts: (1) General information; (2) alphabetical lists of secondary schoolmasters; and (3) list of secondary schools. The first part contains a summary of the past "educational year" and a review of the present scholastic situation. As everybody knows, the unrest in educational matters is not confined to primary schools, although in the secondary ones the question at issue concerns the teaching of ancient languages more than the teaching of the ancient faith. The Year-book is not yet able to record any improvement in the professional organisation of schoolmasters, indeed, one important judgment delivered in the year has given many of them a very scant security of tenure. Medical men can sympathise with a body of men whose profession does not give them protection to which they should reasonably be entitled.

Minor Maladies and their Treatment. By LEONARD WILLIAMS, M.D. Glasg., M.R.C.P. Lond., Physician to the French Hospital, &c. Second edition. London: Baillière, Tindall, and Cox. 1908. Pp. 404. Price 5s. net.—It is not very long since we gave a warm welcome to this book on its début and our recollection of its merits was such that the speedy appearance of a second edition has not surprised us. We remembered well that its author was no respecter of tradition *quâ* tradition but the re-reading of his explicit confession of therapeutical faith leaves us a little astonished at the boldness with which he attacks certain established doctrines. Many will agree with him that the "chill" theory of the causation of visceral affections can be no longer maintained; some will uphold his view that the dread of "draughts" is a bogey which has frightened the majority of the public to dwell habitually in the atmosphere of stuffy rooms; but how many will follow him when he bids us to cease from wearing wool or flannel next our skins, as not being absorbent of moisture, and to substitute loose woven linen, or cotton, or silk? Silk underclothing is luxurious raiment for the favoured few but we cannot doubt that a winter garment of woollen material brings more comfort to its wearer than does one of linen, whilst as regards summer wear, when palpable sweating is a serious factor, we can only say that in tropical experience flannels find more favour with most skins than do the cooler-looking "ducks." We have little else to cavil at. In an admirable chapter on indigestion all functional dyspepsias are divided into two provinces—sthenic and asthenic. The author himself speaks of the multiplication of terms in the description of this disorder and his purpose would surely be served by using the labels "acid" and "atonic" dyspepsia. We think that when he suggests the prescription of morphine in the treatment of indigestion in a lackadaisical woman of 30 years of age he should advise the concealment from her of the nature of the remedy. Two other little points we have noticed. His description of "Sir Andrew Clark's pill" on p. 111 implies the inclusion of both strychnine and nux vomica, and in another chapter his phrasing is open to the interpretation that he advocates the wearing of long hair by men who wish to escape baldness. We do not like the word "cardiopath." But these are trifles in the balance against the book's admirable qualities, its concise reasoning, tinged with judicious dogmatism helpful to the student, its therapeutical acumen, its balanced consideration of "diathetical" medicine, and above all its chapters on change of air and general health, which stamp its author as a rational climatologist and no faddist. What he has to say about spa treatment is illuminating and his advice to apply it in the treatment of constipated children, both as a curative and educative method, is only one instance of his resourceful habit of leaving the beaten track of practice in so-called "minor medicine."

Garcia the Centenarian and his Times. By M. STERLING MACKINLAY. London and Edinburgh: William Blackwood and Sons. 1908. Pp. 335. Price 15s.—Mr. Mackinlay, himself the son of a famous singer, known to most lovers of music as Antoinette Sterling, has written a book which is pleasant to read about a very remarkable personality. Garcia not only lived into his 102nd year but was a teacher of singing who ranks with Porpora and in the minds of the medical profession will ever be held in honour as the first to demonstrate the movements of the larynx to the eye by his invention of the laryngoscope in 1851. He embodied his observations in a paper read before the Royal Society in 1855. Not much notice was taken of the invention by the medical profession until Türck and Czermak, the former of whom had independently arrived at much the same conclusions as Garcia, took up the instrument from a diagnostic point of

view. From a musical point of view Garcia's period covers all the important musicians and singers of the nineteenth century and many of the latter were his pupils. When he was born Haydn had still four years to live, so that Garcia might well have talked to a man who had been the contemporary of Handel and Bach. Beethoven was in his thirty-seventh year. Mr. Mackinlay's pages will revive memories of the great days of the Italian opera when Garcia's gifted sisters Malibran and Pauline Garcia (still living) charmed all ears, while the well-known names of Jenny Lind, Mario, Lablache, Miss Dolby, and others constantly occur. All lovers of music should read the book and especially medical men. We think, by the way, that Mr. Mackinlay's remark on page 109 that Vive Verdi is synonymous with Vive Victor Emanuel is calculated to lead those who are not conversant with the circumstances astray, for the whole point of the cry—which, by the way, was Viva Verdi—lies in the letters rdi = re d'Italia, and not alone in the ve = Victor Emanuel.

JOURNALS AND MAGAZINES.

The Medical Chronicle.—The March number of this magazine is the third and last Dreschfeld Memorial Number. Dr. F. H. Edgeworth and Dr. I. Walker Hall record a case of phosphorus poisoning and some observations on the amino-acids excreted in the urine. Dr. Charles Powell White writes on cholesterol, fluid crystals, and myelin forms, and Dr. W. Mair on gas-containing cysts or air-bladder tumours met with in human pathology. Professor J. Lorrain Smith discusses a case of hæmolymph gland, and Professor J. Dixon Mann contributes a note on colourless fæces without jaundice. Dr. A. Hill Griffith records a case of (?) tubercular intra-ocular growth, and Dr. E. N. Cunliffe one of Still's disease, in which there was reason to consider the condition to be tuberculous. Dr. E. M. Brockbank writes on blood-plates, and Professor Sheridan Delépine summarises his observations on the dirt and pathogenic germs contained in the milk supplied to the town of Manchester during the ten years 1897 to 1906 inclusive.

The Birmingham Medical Review.—In an address delivered before the Midland Medical Society which appears in the February issue of this journal Professor R. Saundby discusses the question of amendment of the Medical Act in respect to its penal clauses and emphasises the danger of throwing the existing conditions of medical practice into the melting pot of Parliamentary discussion. Dr. A. C. T. Woodward writes on the treatment of acute inflammations by Bier's method of passive hyperæmia. Three cases of acute cellulitis are recorded and the author notes that he has had good results in cases of delayed union in fractures and in others of stiff joints and adhesions in tendon sheaths.

St. Mary's Hospital Gazette.—A paper read by Dr. J. Bart Rous before the Hospital Medical Society and published in the March number of this gazette, entitled "Some Glimpses of the Study of Medicine by Englishmen in the Past," gives some interesting excerpts from mediæval medical works. The old physicians appear to have made up for lack of scientific knowledge by a good deal of worldly shrewdness, verging at times upon imposture. The advice, however, given by one, John of Arderne, as to the relations between members of the medical profession can hardly be improved upon in the most recent text-book of ethics.

St. Bartholomew's Hospital Journal.—In the March number Mr. Frank A. Rose records some cases in which an erroneous diagnosis of adenoids was made, and Mr. R. V. Favell gives notes of a case of lepto-meningitis following fracture of the base of the skull. A paper by Dr. C. Addison contains a discussion of social problems connected with population, housing, and so forth, and ends apparently with an aspiration for further State interference in this domain.

The Middlesex Hospital Journal.—In the March issue is published a paper read before the Hospital Medical Society by Mr. H. F. Woods on the subject of hypnotism. An account of the development of this branch is given and suggestions are made as to the more frequent employment of this method in producing anæsthesia in minor operations, such as tooth extraction, and in midwifery practice.

Guy's Hospital Gazette.—In the issue of March 7th is published a clinical lecture by Mr. Charters J. Symonds on obstructed hernia, a condition which is to be regarded as in reality one of strangulation. A paper read by Mr. Lee Atkinson before the Pupils' Physical Society sets forth a new theory of cancer, based on the view that there is normally present in the blood a principle which inhibits growth and which is usually in equilibrium with the force which makes for growth in the tissues. In cancer this balance is somehow upset. There is much of interest in the paper, even if the hypothesis itself seems scarcely likely to be fruitful. In the following number (March 21st) is contained a clinical lecture by Dr. W. Hale White on jaundice due to portal pyæmia, with some useful comments on the diagnosis of cases of jaundice in general.

New Inventions.

AN ARTIFICIAL PELVIC FLOOR FOR DEMONSTRATION PURPOSES.

EVERYONE who teaches midwifery to nurses must be aware of the difficulty of making them really understand what the pelvic floor is and does. The article illustrated was designed with a view to lessening this difficulty. It consists of a ring of whalebone which fits into the pelvis at the level which is usually described as the plane of the cavity of the pelvis. A hammock-like arrangement of batiste is suspended from the ring and opens forward. At the two extremities of the opening pieces of elastic are inserted, thus allowing of con-

siderable distension of the artificial vulval opening. This improvement was suggested by Dr. R. J. Collie. When placed in the pelvis and folded up the model gives the nurse a rough idea of the pelvic floor in its ordinary condition. When a fœtal head is passed through a pupil cannot but appreciate the action of the pelvic floor in rotating the head, and the distension of the vulva by the various diameters of the head is realistically demonstrated. These pelvic floors are used in the London County Council lectures to midwives.

The model is constructed by Mr. J. H. Montague, 69, New Bond-street, London, W., of the best material and can be obtained for 4*s.* 6*d.* C. J. NEPEAN LONGRIDGE.

THE TALMORE ADJUSTABLE HEEL-CUSHION.

WE have received from the designer, Mr. R. E. Bascombe, Alvington House, Bury St. Edmunds, specimens of a small invention which will be found useful in cases of slight shortening of a limb. The title, in fact, reveals the inventor's purpose of making an artificial addition to the heel. This is done by means of an ingeniously contrived cushion to

be placed within the boot. The cushion is a combination of leather, rubber, and cork, the three being in layers which are sewn together in the front and left loose at the sides and back, the line of suture in the front forming a hinge. The leather covering is on the top, then comes a layer of indiarubber, and then a layer of cork, and by the addition of cork wedges varying in thickness, which can be held in position by an ordinary elastic band, the height of the cushion can be raised to suit the convenience of the wearer. The apparatus is placed in the heel of the boot and is secured there by a sharp stud on its under surface. The inventor claims for the Talmore heel-cushion that it is a great improvement on anything hitherto invented for increasing the height of the wearer; but we are not much concerned in a medical paper with its merits from this æsthetic point of view. If a man or a woman decides to increase his or her height by the use of pads beneath the heels we can conceive that the Talmore heel-cushion would be a good contrivance for the purpose, but our remarks are applied to its employment for more serious purposes. The indiarubber layer is constructed of good soft material and is moulded to take the imprint of the heel of the wearer, being thinned towards the centre of the under surface so that upon pressure the heel sinks into a depression and the weight of the body remains supported in the normal way instead of being thrown forward on to the toes in walking. The foot will slide or tilt forward in such a way as to throw some of the weight of the body on to the toes if the cushion is adjusted at a disproportionate height, but the proper elevation must be determined by trial, preferably in the presence of the surgeon. In cases of slight inequality of length of the limb and certain forms of club-foot the Talmore heel-cushion will be found a convenient and useful little apparatus. It has been commended to our notice by a well-known surgeon and is already in satisfactory use by two patients. The price of the heel-cushions is moderate and they can be obtained from the general agents for their sale, Messrs. E. Penton and Son, 1 to 11, Mortimer-street, London, W., and will shortly be procurable through the usual surgical instrument manufacturers. Mr. Bascombe will answer any questions concerning the use of the apparatus.

BRITISH MEDICAL BENEVOLENT FUND.

AT the March meeting of the committee 23 cases were considered and grants amounting to £216 were made to 20 of the applicants, one case being passed over and two postponed for further inquiries.

Mr. E. Parker Young was re-elected chairman of the committee for the ensuing year.

Appended is an abstract of the cases relieved:—

Wife, aged 45 years, of L.F.P.S. Glasg. who is permanently incapacitated. Applicant has tried to obtain post as housekeeper or companion and neither she nor her husband has any means. Three children, of whom two are partially dependent. Voted £16.

Daughter, aged 51 years, of late M.R.C.S. For the last few years has been obliged to nurse her mother, an Epsom annuitant, recently deceased. Is endeavouring to obtain pupils and meanwhile is dependent on two sisters who both earn a very precarious living. Voted £10.

Daughter, aged 43 years, of late M.R.C.S., L.R.C.P. Only income a few shillings a week and has recently undergone a severe operation. Voted £5.

Widow, aged 49 years, of M.R.C.S. Eng., L.R.C.P. Edin. Husband's means were exhausted by an illness lasting several years, during which applicant nursed him and endeavoured to maintain the family by keeping a boarding-house which has now had to be given up owing to her ill-health. Five children, of whom two are able to help and two are dependent. Relieved five times, £72. Voted £10.

Daughter, aged 58 years, of M.R.C.S., L.S.A. No income; earns a few shillings a week by needlework and occasionally receives slight help from friends. Relieved once, £18. Voted £12.

Daughter, aged 56 years, of late M.R.C.S., L.S.A. Was provided for at father's death but lost everything through the dishonesty of a friend. Only income £10 a year from a charity. Relieved four times, £56. Voted £12.

Widow, aged 58 years, of L.S.A. Practically unprovided for at husband's death and endeavours to support herself by letting lodgings. Five children, but only able to give very slight help. Relieved six times, £70. Voted £10.

Daughter, aged 59 years, of late M.R.C.S. Until recently had a daily teaching engagement, but was obliged to give it up to nurse an invalid sister, lately deceased. No income; slight irregular help from friends. Relieved once, £18. Voted £12.

Widow, aged 50 years, of L.R.C.P., L.R.C.S. Edin. Quite unprovided for at husband's death. Six children who help as far as possible. Relieved twice, £20. Voted £10.

Widow, aged 59 years, of M.R.C.S. No income. Lets lodgings. Six children, of whom two are able to give slight help and three are dependent. Relieved twice, £24. Voted £10.

Daughter, aged 54 years, of late M.R.C.S. No income and health so indifferent that regular employment is impossible. Tries to let lodgings but it is only possible for a few weeks in the summer. Small earnings from needlework. Relieved four times £48. Voted £12.

Widow, aged 67 years, of M.R.C.S., L.S.A. Was left entirely unprovided for and for 20 years held a situation as cook in a boarding house. Health now very indifferent. No children. Relieved twice, £24. Voted £14.

Daughter, aged 52 years, of late L.R.C.P. Edin., L.S.A. Used to be employed as a dressmaker, but lost her situation owing to changes in the firm and is now unable to obtain another engagement. Dependent on a friend who allows a few shillings a week. Relieved three times, £30. Voted £10.

Daughter, aged 52 years, of late M.R.C.S., L.S.A. Applicant's mental condition is such that for some years past she has been dependent on three half-sisters who all have to earn their living, and at present she is confined to an institution. Relieved four times, £44. Voted £12.

Daughter, aged 48 years, of late M.R.C.S., L.S.A. Is an epileptic and unable to earn a living. Slight help from relatives and receives £10 a year from the Hospital for the Paralysed and Epileptic. Relieved once, £12. Voted £12.

Widow, aged 39 years, of L.R.C.P., L.R.C.S. Edin. Has trained as a maternity nurse and requires a little help to enable her to present herself for examination at the Central Midwives Board. Two children, aged 11 and nine, both at institutions. Relieved once, £5. Voted £5.

Widow, aged 63 years, of M.D., C.M. Glasg. Receives £14 a year from the Ladies' Working Guild and is given a little help by her son who is a signalman. Practically incapacitated by chronic rheumatism. Relieved eight times, £94. Voted £10.

Daughter, aged 52 years, of late M.R.C.S., L.S.A. No income. Health too bad to admit of regular employment and is allowed a few shillings a week by a sister. Relieved ten times, £113. Voted £12.

Widow, aged 50 years, of L.R.C.P. Edin., L.S.A. No income. Health indifferent. Is at present engaged as a caretaker without salary. No children. Relieved four times, £34. Voted £12.

Widow, aged 47 years, of M.R.C.S. No income. Earns a little by needlework. Two children, one being dependent and the other unable to help. Relieved six times, £59. Voted £12.

Looking Back.

FROM

THE LANCET, *SATURDAY*, April 10th, 1830.

COLLEGE OF PHYSICIANS.

April 5th, 1830.

EFFICACY OF THE GUACO PLANT IN VENOMOUS BITES.

A PAPER by Sir ROBERT KER PORTER[1] on the virtues of the *guaco*, a plant from Caraccas, South America, was this evening read by the Registrar (Dr. Hawkins); it referred chiefly to its remedial qualities in cases of bites received from venomous serpents, the black scorpion, and in hydrophobia. It was stated in the paper, that a native physician had communicated to Sir Robert the result of his experience in its employment, and that its virtues had been known from time immemorial amongst that portion of the black population termed *empiricos*, from their being noted for their exemption from the dangerous effects of such bites. One of these empiricos showed this native physician his confidence in the power of his remedy, by handling one of the most dangerous species of serpents which he had brought with him in a calabash, without apparent precaution of any kind; although, on examination, the animal was found capable of employing its fangs with full effect, the man escaped without injury. On being rewarded for the exhibition, the empirico stated that he derived his preservative from the leaves and juice of the guaco. He subsequently "inoculated" the physician in different parts of the body, by inserting bruised leaves of the plant in the incisions he had made, and giving him some of the juice to swallow. After this preparation, it was found that the serpent had no power, or, at any rate, no inclination to injure him. His servants repeated the same experiment with impunity. The paper went on to state, that the dangerous effects of the bite of any reptile were, without fail, prevented by the use of this remedy, but particularly if swallowed some time previously. The virtues of the guaco were stated to have first become known, by its being observed that a particular species of "falco," which preyed on serpents, attacked them successfully after eating some of the leaves, the effects of which were considered as not confined to the cure of venomous bites, but to extend to cases of severe rheumatism of many years standing, and other chronic complaints. Specimens of the plant and juice were on the table of the Hall.

[1] Sir Robert Ker Porter, known as a painter and traveller, was also British Consul at Caracas (Venezuela) from 1826-1841.

THE LANCET.

LONDON: SATURDAY, APRIL 11, 1908.

The Housing Bill.

As stated in our Parliamentary Notes last week the Housing and Town Planning Bill of the President of the Local Government Board has been read a first time in the House of Commons. The second reading, which was down for April 1st, was postponed. The anticipations of those who expected that the Bill would contain drastic compulsory powers have not been realised, for its main features embody an extension and a simplification of existing powers. Whether this extension and simplification will arouse to a sense of their responsibilities the members of those sanitary authorities which have hitherto been notoriously inactive will depend in great measure upon the extent to which the Local Government Board and the county councils exercise the powers given to them by the Bill to enforce the execution of its provisions and the provisions of existing Housing Acts. The Local Government Board is given power after due inquiry to order a defaulting sanitary authority to carry out such works and to do such things as may be required to remedy the default. But it must not be forgotten that since 1875 the Board has been in possession of the same power to enforce the carrying out of the requirements of the Public Health Act of that year and has been singularly reluctant to exercise it. So reluctant that according to the latest records although, during the five years 1902–1906, at least 13 formal complaints were made by county councils and others of defaulting sanitary authorities in only one instance did the Board make an order upon the authority to carry out its statutory duties. It may well be asked, with this experience before us, whether the powers proposed to be given to the Board in connexion with the Housing Acts is likely to be any more effective than has been that which it already possesses as regards the Public Health Act. It is true that the policy of the Board has always been to effect reforms by persuasion rather than by compulsion, to convince of the necessity for reform rather than to coerce an unwilling authority to do that for which it either does not or will not see the need, and with this policy we are in entire agreement.

The improved conditions which are now to be found in every district are admittedly due to the system of education which the sanitary authority has been undergoing during the past half century at the hands of the Local Government Board and of sanitary officers generally. The fuller powers that are wanted are in the direction of increasing the facilities for this education rather than in adding to the compulsory powers of the Board. Included in these facilities is the appointment of properly trained sanitary officials who, having a special knowledge of the subject, will be able to give advice with a sufficient amount of authority to carry conviction with it. The necessity for the possession of this special knowledge has been recognised in the case of large districts or combinations of small districts to which can be appointed as medical officers of health only those who have a degree in sanitary science or a diploma in public health or State medicine, and during the past few years a very laudable and more or less successful attempt has been made by the Local Government Board to add to the number of these specially qualified medical officers of health by urging upon adjoining sanitary authorities the advantages of combination for the purpose of securing the services of one official devoting his whole time to public health duties. It is to be regretted, however, that the Board has not at the same time taken any steps to insure to the official when appointed a reasonable security against dismissal in the event of the advice which he tenders being displeasing to a majority of the electing body.

There are two clauses in the Bill which are calculated to do an immense amount of good but each depends for its successful application upon the effective initiation of the medical officer of health. Each clause is but an amplification of sections of the Housing of the Working Classes Act of 1890, and there can be no question that these sections have not been enforced as they might have been because of the conditions under which a medical officer of health holds office. If no alteration is made in this respect and he is still subject to reappointment year by year the clauses of the Housing Bill will be as ineffective as the corresponding sections of the Act of 1890. Clause 13, one of those to which we refer, is a repetition of Section 32 of the Act of 1890 with an important difference. In the latter the medical officer of health or other officer of the sanitary authority must convince not only the authority that a particular house is unsuitable for human habitation but he must also prove the same facts before a court of summary jurisdiction which alone has the power to make a closing order. The Bill dispenses with the appearance before the justices and enables the sanitary authority to order that a house shall cease to be occupied. But, as already stated, the first step towards condemnation and ultimate closing has still to be taken by an official dependent for his very livelihood upon the goodwill, it may be, of the owner of the condemned property. In the case of hopelessly uninhabitable dwellings obviously no difficulties arise but there are innumerable stages between the condition of a derelict cottage and that of one which is on the verge of becoming uninhabitable. The medical officer of health has to decide when the borderland has been crossed and it is intolerable that his decision should appear even to be biassed by the prospect of making one or more members of the sanitary authority hostile to his interests. Clause 26, which is an extension of the principle embodied in Section 75 of the Act of 1890, defines houses for the working classes as those with an annual rateable value in London of £40, in Liverpool, Manchester, or Birmingham of £20, and elsewhere of £16, and provides that in the case of such houses there shall be implied a condition that at the commencement of the tenancy they are in all respects reasonably fit for human habitation. Clause 27, which is entirely new, provides that in the case of the houses of the character named the implied condition of the tenancy shall include an understanding that the house shall during the holding be kept by the landlord in all respects reasonably fit for human

habitation, and if it appears to the sanitary authority that this condition is not complied with the landlord may be called upon to carry out the necessary repairs and in default of his doing so they may be executed at his expense by the authority. All this is excellent but both these clauses will be quite inoperative unless the official—again the medical officer of health—who is, in the first instance, to tell the sanitary authority that a particular house is not in "all respects reasonably fit for human habitation," is in an absolutely independent position and free from the least suspicion of partiality or prejudice.

There is reason to believe that an effort will be made to get inserted in the Bill a clause which in the future will prevent the appointment of medical officers of health for a limited period but which will enable a sanitary authority to remove them from office after reasonable notice and with the sanction of the county council or the Local Government Board. If the supporters of the Bill are genuinely anxious that its provisions shall be enforced and that they shall not remain a dead letter, as so many other public health enactments have remained, they will admit the principle of this additional clause. We are fully aware that there are difficulties surrounding the question that do not appear on the surface. There is, for example, the interference with the control of the local electing body, which it must not be forgotten, however, pays only one-half of the salary of the medical officer of health but which claims to have complete control over him. As the Imperial funds contribute an equal portion of his salary there can be no injustice in the State having a voice in the conditions of his appointment. Then there are the so-called difficulties connected with compensation in case it should be found necessary to call for the retirement of a medical officer of health in consequence of the re-arrangement of districts into one or more combinations. Similar difficulties were successfully overcome in connexion with Poor-law appointments by the permanent officials of the middle of the last century, and we can hardly believe that their successors are less capable or less skilful in this direction. They have an opportunity for displaying their skill and their capabilities which ought not to be lost and we have every confidence that if they use it aright they will have the cordial support of all those who have the well-being of the people at heart.

Unqualified Practice and Secret Remedies.

THE question of the practice of the medical art by unqualified persons, together with the unrestricted sale of "secret" remedies, is becoming a very serious matter as regards the health of the people. Not that these two forms of "commercial activity" are anything new, for quacks of all kinds flourished in the Middle Ages, although perhaps they attained their zenith so far as impudence went in the later years of the eighteenth century. But we think that at the present time they are far more mischievous than of yore and that for many reasons. First, their numbers have increased. Secondly, owing to the spread of education nearly everyone can read, and does read, the cheap press and the cheap monthly magazines. Thirdly, owing to competition the owners and editors of the daily press and of the popular magazines exercise a most indifferent control over the advertisements which appear in their columns. One honourable exception recently existed, but we regret to say is now defunct, and that was our late contemporary the *Tribune* which did do its best to keep out offensive and deceitful advertisements. But the reader who takes up nearly any daily journal will be almost certain to see flaming advertisements of secret remedies which promise far more than is possible of performance. That of Bile Beans for instance, still appears in the public press, and it was of this business, it will be remembered, that Lord ARDWALL, one of HIS MAJESTY'S judges in Scotland, said it "was one founded entirely upon fraud, impudence, and advertisement."[1] In the *Daily Chronicle* of March 30th is a whole column advertisement headed "Special to the *Daily Chronicle*." In this advertisement it is stated that an absolute cure for cancer has been discovered, the inventor being a certain Professor STROOP. We have selected these two advertisements at random as they appeared quite recently but there are plenty of others just as mischievous. And not in these islands alone is the evil widespread. In Australia a Royal Commission has recently been held on the matter with the result that a report embodying most stringent recommendations was issued in the later months of last year.

Other countries of Europe are feeling the evil also and we have before us the main provisions of a Bill which has been drafted for consideration by the German Parliament and which has been printed in the journal *Soziale Medizin und Hygiene*. Many of the provisions are very similar to the recommendations of the Australian Royal Commission, the most important of which were given in the letter from our Australian correspondent which appeared in our issue of Oct. 5th, 1907, p. 995. Legislation to prevent or to put an end to quackery has been tried in many countries and has as a rule proved unsuccessful. For no legislation, unless it be of a Draconic nature, is successful unless the population of the country in which it runs is in sympathy with it, and it must be confessed that the population of most countries revels in quack medicines of all kinds. There are, however, certain legislative enactments which would prove of great use, and they are those which have for their object first the purifying of advertisements and, secondly, the removal of secrecy. The following, taken from the draft German Bill, will show the kind of legislation to which we refer:—

> Any person who shall cause to be circulated any advertisement or puff dealing with the prevention, alleviation, or cure of any human or animal disease, pain, or injury, and containing wilful mis-statements such as are calculated to give rise to misconceptions as to the value or efficacy of the remedy, article, or method advertised, shall be punishable by imprisonment for a term of not exceeding one year and shall be liable to a fine not exceeding £150; or shall be liable to one of these penalties. The same holds good when such persons shall wilfully make mis-statements having reference to the manufacturer or originator of the remedy, article, or method in question, or having reference to any person responsible for such advertisements, or who shall make mis-statements regarding the "professional" results of one or other of these persons.
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> The following persons shall be guilty of a misdemeanour and shall be liable on conviction to imprisonment for a term

[1] THE LANCET, Sept. 16th, 1905, p. 861.

of not exceeding six months and to a fine not exceeding £75; or to one of these penalties:—I. Any person advertising or recommending himself as being able to treat individuals at a distance (*Fernbehandlung*). II. Any person advertising or recommending remedies, articles, or methods directed to prevent, alleviate, or cure venereal diseases, to remove sexual impotence, or to promote sexual stimulation, to prevent conception, or to arrest pregnancy. III. Any person advertising or recommending remedies, articles, or methods for which it is claimed that they serve to prevent, alleviate, or cure human or animal disease, pain, and injury, where the ingredients or composition of the remedies or articles sold, or the essential features of the methods practised, are concealed or veiled from the purchaser or subject. The clauses (II.) and (III.) shall not be applicable to advertisements or recommendations inserted in medical, veterinary, or pharmaceutical journals.

If some such regulations as the above become law in Germany, or could become law in these islands, unqualified practice would receive a great set-back. Advertisement would become an expensive method of obtaining publicity and the necessity for disclosing the composition of the remedies would probably make would-be purchasers buy (for instance) the ordinary iron pills of the Pharmacopœia at about 1*d.* per dozen, instead of Bodger's Blue Boluses at 1*s.* 1½*d.* per box. But there is yet a simpler method of staying the noxious trade of secret medicines and of quack treatment, electrical and otherwise. We have pleaded for it on many previous occasions, for instance, in our issue of May 12th, 1906, p. 1365, and it is this. Any unqualified person claiming to be able to treat disease by drugs or otherwise should have to pay a heavy annual licence. It is beside the mark to say that such a licence would be a Government recognition of quackery, for quackery is perfectly legal now. Brewers, licenced victuallers, and tobacconists all have to pay a licence to carry on their trade, and such licence implies no guarantee of the purity of articles sold by them. If the tribe of quacks and patent medicine vendors had to pay a licence, which should be renewable annually, which should be revocable at the pleasure of the authorities, and which should cost not a paltry guinea but at least £500 per annum, a great step forward in the safeguarding of the health of the people would have been made. We commend this notion to the notice of Professor ROBERT SAUNDBY, a reprint of whose judicial and sensible paper [2] on the Amendment of the Penal Clause of the Medical Act lies before us.

The Irish University Bill.

MR. BIRRELL, the Secretary of State for Ireland, appears to have produced a scheme for dealing with the Irish University question which bids fair to give sufficient general satisfaction to warrant not only a place on the statute-book but expectation that a settlement of a much-vexed question may be thereby arrived at. Under Mr. BIRRELL'S scheme, by which two new universities will be created for Ireland and one will be superseded, the Irish nation will be in possession of three separate teaching and examining universities, one of which will be rich, while the other two will have fairly substantial endowment. The difficulty in respect of creeds is solved, though solved in a way that cannot bring satisfaction to those who have the best and fullest conception as to the meaning of university education. Trinity College, Dublin, remains untouched, a position which it owes to its distinguished past. That portion of the Royal University of Ireland, now superseded, which had its seat at Belfast will be elevated into the University of Belfast, and a new university having its headquarters in Dublin will be instituted, of which Cork and Galway will be constituent colleges, while the Maynooth and Magee Colleges and the Catholic School of Medicine will be affiliated to it. The objection to the scheme in the eyes of all who have the highest type of university education before them as a model is that education in Ireland will remain parcelled out into water-tight compartments. Trinity College will receive the Episcopalians, the University of Belfast will receive the Presbyterians, and the new University in Dublin, as yet unnamed, will receive the Roman Catholics, and such separation of the holders of different creeds and observances from each other must detract from the universality of education, but the circumstances of Ireland well warrant Mr. BIRRELL making no futile struggle for the ideal. Mr. BIRRELL has done his best. There are to be no religious tests in the new universities and there will be some representation on the senates at Dublin and Belfast, both of Protestantism and Roman Catholicism.

The finest thing that can possibly happen for Ireland is the spread of education, and undoubtedly the Irish University Bill will help to place a liberal education before the middle-class youth of Ireland. The medical profession can hardly fail to benefit in the general improvement which will take place in educational standards and the diffusion of knowledge, and we look forward to seeing thoroughly well attended medical and scientific schools in connexion with all three foundations. If more money is needed to secure this end we hope that it will be freely forthcoming. It was impossible to suppose that the North of Ireland would view with complete approval Mr. BIRRELL'S scheme or the way in which the funds for carrying it out were allocated. The £20,000 annually given to the Royal University of Ireland will now be divided between the new university in Dublin and the University of Belfast, while Belfast will receive a further grant of £28,000 per annum and £60,000 for building and equipment and Dublin will receive £32,000 per annum and £150,000 for building and equipment. The attitude of the Royal College of Surgeons in Ireland towards the establishment of a new and endowed medical school almost at its door could be anticipated. The medical school in connexion with the Royal College of Surgeons in Ireland can hardly fail to be damaged to some extent by competition with the endowed medical school of the new university, and we trust that Mr. BIRRELL will see his way to compensate the College for any injuries which it may receive. Mr. BIRRELL has been approached in this sense already, and there may even now be definite proposals set on foot for safeguarding the interests of the distinguished Irish corporation. In a Bill which has been so obviously inspired by a desire to please everybody there should be no element of discord which can be eliminated.

[2] Read before the Midland Medical Society on Jan. 29th, 1908.

THE Earl of Cranbrook has become a Vice-President of the Royal Sea Bathing Hospital, Margate.

Annotations.

"Ne quid nimis."

RICHARDSON v. FREMLIN.

FORTUNATELY for the good reputation of medicine cases involving disputes over fees do not often come before public notice, and when they do it is almost invariably a question of a fair professional fee being disputed by the public, members of which too often consider that they have a right to value professional services at their own estimate. Unluckily, cases do occasionally arise in which the patient has been overcharged and a regrettable example of this has recently attacted much public attention. In the case of Richardson *v.* Fremlin, reported in the *Times* (on March 31st and two following days), the plaintiff, a dentist, claimed the sum of £570 3*s.*, an amount alleged to be the sum agreed upon for professional services rendered to the defendant's wife. This large amount was made up of the sum of £389 11*s.* for 185½ half-hours' work for surgical and operative work, in addition to the sum of £180 12*s.* for mechanical work. The actual work done consisted of the restoration of the teeth of the upper jaw by means of a removeable bar which the plaintiff claimed was a work of great and exceptional difficulty and could be done by no other dentist in England. It would appear from the evidence of Mr. Richardson that he explained to Mr. Fremlin his charges and the character of the work which he intended to do. As far as can be gathered from the report, the "bridge" was attached to five roots, and on the preparation of these and the denture the plaintiff alleged that he had spent 185½ half-hours at 4 guineas an hour. The expert evidence for the defence showed that the work done by the plaintiff was such as could be done by any fairly competent practitioner and that a reasonable charge for the work would have been something between 75 and 100 guineas, and it was clearly brought out that the plaintiff had charged for preparing one tooth for the bar the sum of £65 12*s.* 6*d.* In summing up Mr. Justice Grantham stated that the question which the jury had to decide was whether there was a contract, and in his opinion there was some evidence of a contract. Assuming the contract to be for 2 guineas for every half hour, the question was whether that meant every half hour that the plaintiff could succeed in keeping the patient in the chair, or every half hour really taken up with work, and it was also a question for the jury whether all the half hours were properly charged. The plaintiff had suggested that the time which he had had to devote to the patient had ruined his practice, but reference to his day book showed that this was not the case, and that on many occasions he had no other patients, and that he could, if necessary, have devoted twice the time to the patient. In reviewing the case we cannot help feeling that an excessive time was taken in preparing the work. But, granting that the time given by the plaintiff was not one minute less than that which was necessary for the proper treatment of the case, he would, we think, have been acting in a more satisfactory manner if he had given to Mr. Fremlin some more definite idea of the very large amount that would have to be paid for the operation. It seems also to be uncontradicted that in this case the plaintiff led his patient to believe that he was the only man in the whole of England capable of doing the class of work that was being done. Tactics of this sort undermine the confidence of the public in the professional man, and we were surprised to find a gentleman who holds a position on the representative board of the British Dental Association giving evidence in support of the claims of the plaintiff. The jury returned a verdict for the plaintiff for £178 5*s.* in addition to £100 paid into court, and we do not think that many of Mr. Richardson's professional brethren will feel much sympathy with him in recovering some £300 less than his claim. We mention this because Mr. Richardson seemed to think that his action was in some way taken for the vindication of professional rights.

THE REMOVAL OF SUPERFLUOUS HAIRS.

THE distribution of hair appears to many to be an exception to the general law of wise beneficence which characterises the arrangements in this world, for while many of us have to deplore the too early departure of the hair from the scalp others lament even more bitterly the appearance of hairs on the lips and chin. There have, it is true, been "bearded" women who have worn with pride these hirsute ornaments, rarely vouchsafed in so great a degree to members of their sex, and in some countries, such as Spain, a little moustache is considered to enhance a woman's charms. In this country as a rule, however, any visible indications of a beard or a moustache are not welcomed, and the fervency of the wish to be deprived of them is proved by the numerous advertisements which exist with regard to their removal; in fact, there are as many preparations for removing unneeded hairs as there are for re-covering with hair scalps that are prematurely bald. How can superfluous hairs be removed? The simplest answer to this question is to suggest an application which may in some cases do away with the need for the removal of the hairs. Dark hairs are much more conspicuous than fair hairs and if the hairs can be made lighter in colour they will be much less visible. There are many substances which will bleach the hair but the best is certainly peroxide of hydrogen, and for slight cases of hairiness it is quite sufficient. The lotion has to be used at frequent intervals, for it has little, if any, permanent effect, though some have claimed that under its use the hairs grow less freely. In Eastern countries depilatories of various kinds are much used and they nearly all consist of pastes or lotions containing, amongst other ingredients, a sulphide of an alkali or of an alkaline earth; those most commonly used are the sulphides of calcium and of barium. The action of these sulphides is due to the fact that the keratin of the hair is a little more easily acted on by the sulphides than the keratin of the skin. They do, however, dissolve the keratin of the skin, and if they are employed in too strong a form, or if they are left too long in contact with the skin, the part is made very sore and red, and if the process is frequently repeated the growth of hair seems to be stimulated and the last state may easily be worse than the first. The sulphide must be employed well diluted with some innocuous substance such as oxide of zinc, and when the paste is removed it should not leave behind it a redness of the skin lasting for more than a few minutes. If employed with care the sulphides form useful depilatories but the effect is merely temporary and the application needs to be renewed about every week or two. For epilating the scalp in cases of ringworm and favus the x rays have within recent years been much employed, and when used by those well skilled in their employment they have generally given satisfaction. The hair returns usually in a few weeks after the application and grows freely. Attempts have been made to employ x rays for the permanent removal of hairs and there can be no doubt that the rays do possess the power of destroying the hair follicles, as has unfortunately been shown in a few cases where the rays have been used for the treatment of tinea and other conditions. Occasionally the x rays have been used for the destruction of the hair follicles of the chin but the risks are very great and we have known of cases in which ulcers, scars, and marked telangiectases have replaced the hirsuties and hence made the appearance much more

unsightly than it was before. It is fully determined now that x rays should never be used for the removal of superfluous hairs from the face. The best method for the permanent removal of hairs from the face remains to be mentioned, and that is electrolysis, but this method, too, is by no means free from danger and in the hands of the ignorant the electrolysis can do much harm. It was first employed by Michel for removing ingrowing eyelashes, and Hardaway first used it for removing superfluous hairs from the skin. It is essential that the needle should be attached to the negative pole, for if the needle is steel and it is attached to the positive pole very unsightly black stains will be produced, and these are permanent; in fact, a tattooing has been performed. It is very important that so far as possible the process should be aseptic; the patient's skin and the needle must be carefully cleansed or suppuration may occur. If hairs too close together are operated on at the same sitting the intervening tissue may slough and a scar may follow; and even when no definite scars result chronic septic processes may follow leading to the production of wrinkles and furrows which detract greatly from the appearance of the face; even keloidal growths have been reported. It will thus be seen that the electrolysis of superfluous hairs requires just as much care and skill as many minor surgical operations. It is, indeed, a surgical operation and it is not right that it should have fallen into the hands of "beauty specialists" and "manicurists." The public is led to think that it is an unimportant procedure but it has possibilities of harm which are undreamed of by the patients and often by the operators themselves. It may well be that a careless or ignorant operator may render a face markedly unsightly which previously to the operation had shown merely a few dark hairs. Unless the hirsuties definitely spoils the appearance of the face it is well for the patient to rest content with milder methods than electrolysis.

AFTER-HEALTH OF UNIVERSITY OARSMEN: AN OLD STORY.

THIS which follows is an old story; it need scare no relative of either of the crews whose gallant struggle last week engrossed so much attention. It is now more than 40 years since F. C. Skey, ex-President of the Royal College of Surgeons of England, wrote to the *Times* to prove that, in his experience and that of many of his colleagues, the constitutions of an appreciable number of the rowers in the Oxford and Cambridge University boat-race had undergone permanent damage from over-exertion during the contest. The letter aroused lively controversy and led in 1873 to the publication by Dr. John Edward Morgan of "A Critical Enquiry into the After-Health of the Men who Rowed in the Oxford and Cambridge Boat-Race from the year 1829 to 1869." The work contains many letters from former oarsmen, most of which testify to the good effects produced upon them by hard rowing. Some writers, however, complain of heart weakness and digestive troubles set up in the first instance, so they believed, by over-exertion during and before the race. The following table has been compiled from Dr. Morgan's accurately obtained statistics. It differs slightly from his own published table. The 17 cases of injury are mainly attributable to heart disease, but are not fully discussed. In drawing a lesson to-day from these details it should be borne in mind that some of the early races were more than five miles long and that full trials were rowed daily for some ten days before the race. Would it be possible for someone to undertake a similar investigation into the physical state of the competing Blues from 1869 onwards? The information would be, we believe, reassuring and very interesting if the deductions drawn from it are not of too sweeping a nature, and if the matter were compiled on a more comprehensible plan. Let us guess that the two crews of 38 years would give us from 350 to 400 different individual men whose history would have to be inquired about, the rough total being arrived at by surmising that nearly half the men take part more than once in the struggle. The effects of the physical and the mental strain upon 400 young men all about the same age and all to a large extent drawn from the same class and all embarking in the same circumstances upon the same contest are certainly worth noting from a medical point of view. All the evidence that would be obtained would not be of equal value and some would be worth very little, but suggestive facts would certainly be forthcoming. Dr. Morgan's statistics have one source of confusion—the same man may be counted in them more than once, so that (for example) the three men who are put down as injured in 1864 may some or all of them have been put down as benefited or uninjured in 1861, 1862, and 1863. Dr. Morgan's figures show 17 cases of injury out of 416 men, but 416 different men did not take part in the races, though 16 men competed in each year.

Effects of Training and Rowing upon the Eights, 1829–69.

—	Benefited.	Uninjured.	Injured.
1829	8	7	
1836 (second University Boat-race)	4	1	0
1839	7	7	2
1840	3	13	—
1841	4	12	—
1842	9	7	—
1845	2	10	4
1846	1	13	2
1849	5	10	1
	8	6	2
1852	5	11	—
1854	5	11	—
1856	1	13	1
1857	5	11	—
1858	9	7	—
1859	12	4	—
1860	8	8	—
1861	5	10	1
1862	4	11	1
1863	2	13	1
1864	7	6	3
1865	8	7	1
1866	8	7	1
1867	11	5	—
1868	13	3	—
1869	13	3	—

THE PROPOSED NEW HOSPITAL FOR MENTAL DISEASES.

OUR readers will remember that the asylums committee of the London County Council has recently had under consideration the munificent offer of Dr. Henry Maudsley to contribute £30,000 towards the cost of the erection and equipment in London of a hospital of 100 beds for the treatment of cases of recent and acute mental disorder. We commented upon the matter in a leading article in THE LANCET of March 7th, p. 728, in which we set forth the reasons which led to the offer being made. These have been accepted as convincing by the committee of the London County Council to which the matter was referred, and it has now recommended that the £30,000 be accepted from Dr. Maudsley and that an equal sum be contributed by the Council which will maintain the institution when completed. The committee fully endorses the scientific and humanitarian advantages which the author of the scheme claimed for it and

expresses itself as very hopeful that its adoption will afford some relief to the rates by the prevention of insanity. We have no fault to find with this as a pious opinion but we hope that it does not foreshadow that the control of the institution by the County Council will mean primarily a desire to run it "on the cheap" out of consideration for the ratepayers. The proposed hospital will afford a great and useful experiment which should be favoured by every encouragement, and if there be any sign of the entry of cheeseparing into its administration it will confirm us in our opinion that the control of its destinies would be better in the hands of a body of independent governors looking to the charitable public to support an institution which might reasonably expect a widespread and practical sympathy from many generous persons.

THE METROPOLITAN WATER-SUPPLY.

THE report of the Metropolitan Water Examiner for December, 1907, is of double interest, as after the usual monthly record an elaborate appendix is added which gives very fully and carefully a digest and tabular summaries of the water examinations during the past year. A measure of the work which is entailed by the watchfulness of the Board's examiner is given by the fact that in 1907 the number of samples examined chemically was 3393 and bacteriologically 8950, which involved the use of 306,691 dilution and culture tubes. The chief advance in laboratory method during the year has been the adoption of Dr. A. C. Houston's quintuple preferential test for bacillus coli, and he now gives his results for that organism under the heading "Typical B. coli," which, he says, corresponds to "Flaginac B. coli" of last year. He has not discarded the old method as unsound but finds the quintuple tests more expedient for Board purposes. Whilst congratulating Dr. Houston on the elaboration of a useful method we regret as fully as he does its confirmation of the fact that London is served by a sewage-polluted water-supply. We commend the following digest of the B. coli findings for 1907 to the attention of our readers, many of whom they concern intimately:—

Source samples.	Percentage of samples found to contain bacillus coli *after filtration*, the samples being respectively of (*a*) 100 c.c., (*b*) 10 c.c., (*c*) 1 c.c., and (*d*) 0·1 c.c.			
	(*a*)	(*b*)	(*c*)	(*d*)
New River	9·8	4·0	0·5	0·06
East London (Lee)	10·9	2·7	0·8	—
East London (Kempton Park)... ...	11·5	0·8	—	—
Chelsea	8·1	2·2	0·6	0·1
Grand Junction	15·5	4·5	0·5	0·1
West Middlesex	14·3	6·1	0·8	—
Southwark and Vauxhall	22·7	12·7	3·4	0·5
Lambeth	14·1	5·5	1·4	0·3
Thames-derived water	15·5	6·3	1·3	0·2
Kent (*chalk wells* water, delivered unfiltered)	8·9	1·2	0·4	—

This table shows that with the single exception of Chelsea the unfiltered water from the chalk wells of Kent is considerably purer than any filtered river-supply. Chelsea water gives a much higher "total organic carbon" than the Kent supply, which, except for its extreme hardness, must be awarded the palm of excellence. The badly needed remedy is additional accommodation for storage and settlement, as the report points out in a paragraph which might almost be stereotyped, so often has it been printed. We hope this matter may find a speedy solution, and print the above table with the view of awakening attention to the fact that London water is very far, indeed, from bacteriological perfection. The figures for December are particularly bad, for only 54·4, 72·9, and 29·4 per cent. of the filtered water samples derived from the Thames, Lee, and New River respectively contained *no* typical bacillus coli in 100 cubic centimetre samples, whilst one cubic centimetre samples of these waters before filtration contained B. coli in the measure of 100, 100, and 81·2 per cent. respectively. Such results as these are under existing arrangements the inevitable sequence to a time of flood, and we can hardly hope for better things in the report for January, since the December rainfall was 4·13 inches and the Thames water at Hampton was reported "bad"—i.e., coloured and turbid—from Dec. 1st to the 18th, then "indifferent" until the 22nd, and "good" for 10 days of the month only. We have felt it our duty to dwell upon the least pleasant aspect of London's water-supply but in doing it we intend no disparagement whatever to the hard-working and often devoted manner in which the Board's engineers fulfil their duty, often in very adverse circumstances. None but the engineers can appreciate the difficulties in the way of securing a pure service and we are convinced that they systematically grapple with the task to the best abilities of the appliances with which they are equipped; but if London is to rely on a source of supply which is inevitably sewage-contaminated the onus is upon the responsible officials to provide appliances to render that contamination harmless, and above all to render the purity of the service more independent of flood time and drought time than is the case at present. Their own experts month by month are pointing out the means by which this end may be largely attained.

AFFORESTATION.

IT is announced that the labours of the Royal Commission on Coast Erosion are to be extended to the question of afforestation and the *personnel* of the Commission has been altered with that object. Long experience has taught us that reference to a Royal Commission is no guarantee that a particular question will be brought within the range of practical politics; nevertheless, all who are interested in the public health should welcome discussion of this subject. Although the influence of forest upon climate is likely to be exaggerated, there is no doubt that extensive woodlands tend to render the climate of a country more equable. According to observations made in several German forests it has been found that in the month of July the temperature of the soil beneath the trees was 7° F. lower than in the open field, whereas in December the forest soil was found to be rather warmer than the ground in more exposed places. It is also stated by geologists that trees tend to increase the precipitation of moisture, while Sir Archibald Geikie in his "Text-book of Geology" says that the destruction of forests is alleged to increase the number and the severity of hail-storms. The same writer tells us that in some parts of the world removal of trees has led to depopulation. Thus from 1836 to 1866 the departments of Hautes and Basses Alpes lost 25,000 inhabitants, or nearly one-tenth, of the population, a diminution which has been assigned to the reckless removal of the pine forests, whereby the steep mountain sides have been washed bare of their soil. Apart from the commercial aspect of the matter, the growth of timber on waste lands is also important in connexion with water for town supply and agricultural purposes. If the catchment area which supplies a particular stream is wholly bare of trees a sudden rain storm produces a flood which quickly passes away. But if, on the other hand, the hilltops are covered with vegetation, the woods and undergrowth act as a kind of sponge which parts with its moisture by slow degrees. In effect, the forest acts as a kind of natural reservoir. In these days, when the adequate supply of water to large towns is becoming more and more difficult, any

agency which will operate to prevent water finding its level too soon cannot fail to be beneficial.

RECENT OBSERVATIONS ON THE TSETSE FLY.

As the subject of sleeping sickness attracts much attention at the present time, our readers will be interested to hear the results of an inquiry undertaken by Mr. E. A. Minchin, the professor in the recently established chair of protozoology in the University of London, on the trypanosomes of the tsetse flies and other diptera. Mr. Minchin went to Entebbe in Uganda in April, 1905, and stayed there until December. The commission with which he was specially intrusted was to study the life-cycle of the trypanosoma Gambiense in its relation to the local species of tsetse fly (glossina palpalis), but this investigation proved barren of results or yielded conclusions chiefly of only a negative character. Incidentally, however, he made some observations on another species of trypanosoma occurring in the tsetse fly which he thinks may prove useful as a guide to future investigators. Mr. Minchin's colleagues, Mr. A. C. H. Gray and Mr. M. G. Tulloch, who preceded him in investigations on the trypanosomes of the tsetse fly, found swarms of "wild" trypanosomes in the alimentary canal of freshly caught specimens of these flies. These they at first considered to be stages in the development of the trypanosoma Gambiense to which sleeping sickness was attributable. Mr. Minchin's investigations, however, with those of his colleagues speedily led them to the conviction that the "wild" trypanosomes had nothing whatever to do with the trypanosoma Gambiense and constituted another species to which M. Mesnil had previously applied the name of Grayii—the trypanosoma Grayii. Mr. Minchin made a preliminary study of the anatomy of the glossina palpalis and in this article corrects some errors into which he had previously fallen. Thus he recognises in the alimentary tract a proventriculus, thoracic or sucking stomach or crop, which after the animal has fed contains bright red blood; a true stomach which is the first part of the digestive tract in the abdomen and in which the blood still retains its bright-red tint but becomes thick and jelly-like; and to this succeed the coils of the true intestine in which the ingested blood becomes dark, very fluid, and watery, with fewer red corpuscles and often with numerous square crystals in it. The black blood stops short at the point where the Malpighian tubules arise and where the proctodæum commences. The proctodæum contains no blood but a yellowish fluid in which are suspended numerous coarse granules showing Brownian movements. Thus the abdominal gut exhibited some time after the fly was allowed to feed three regions well defined by their colour—the red stomach, the black intestine, and the yellow proctodæum. The fluid used for examination of the fly for trypanosomes was withdrawn from the pericardial space by means of a capillary tube; it was found that except for bacteria the tsetse fly was very free from internal parasites; no gregarines or other sporozoa were found in the trypanosomes. The trypanosome body is fusiform and transparent, and presents near the middle of the body a nuclear apparatus which he thinks is specialised into two distinct portions—a kineto-nucleus regulating the function of locomotion and a trophonucleus controlling nutrition. There is also a basal granule giving origin to the flagellum. The basal granule is a true blepharoplast, which gives origin to a flagellum—a whip-like body that runs along the edge of an undulating membrane—and is here named the marginal flagellum, and becomes free at the anterior end of the body. In all cases alike the trypanosomes are distinguishable by their general build and appearance into slender, stout, and intermediate forms. The slender forms are actively motile and the stout are listless. The slender forms have a long free flagellum in the cytoplasm and the stout forms have a short one. The anterior end of the body is prolonged into a slender filament running for some distance along, or even to the end of, the flagellum. Vacuolation is occasionally to be observed but probably indicates an abnormal condition. There seems to be little doubt that sleeping sickness is due to the presence in the blood of the trypanosoma Gambiense, and it is equally certain that the tsetse fly, named by entomologists the glossina palpalis, is the active agent in conveying the infection, but some obscurity still exists in regard to the precise mode in which that infection is transmitted. It has been shown by Ross, Grassi, and others that in malaria the mosquito is a true host in which the parasite goes through a complicated developmental cycle at the close of which, but not before, the mosquito is able to infect a fresh vertebrate host with the parasite. This mode of infection, Mr. Minchin suggests, may be characterised as the "inoculation cyclical" type. But in the case of infection through the trypanosoma Gambiense the type seems to be a different one, the protozoon being inoculated mechanically by the proboscis of the blood-sucking fly, and it may be observed that the capability of infecting a vertebrate animal only lasts for a period of 48 hours; with a longer interval no infection was obtained. It is interesting to notice also that freshly caught flies may produce infection with trypanosomes without having been fed previously upon infected animals. The experiments made upon monkeys show that many freshly caught flies are free from the infecting agent or that some monkeys are immune. Thus in one case 2299 flies were fed on a monkey over a long period without infecting it, whilst in another case as small a number as 134 flies produced an infection in it. When infection did take place it occurred much more rapidly with the freshly caught flies than with those that had been fed upon animals affected with trypanosomes. In experiments made with flies fed on an infected animal and transferred at once to a healthy animal Mr. Minchin found that he could infect nine out of ten animals each with a single fly. The origin of the trypanosomes that multiply with such rapidity in the blood of vertebrates is unknown but it seems probable that they are derived by the fly from infected vertebrates; but if taken from the intestine of the fly and artificially injected into susceptible hosts they will not infect them. Infection is apparently produced only by the trypanosomes in the proboscis of the fly. But different species of fly contain trypanosomes of very different degrees of virulence. In the second part of his memoir Mr. Minchin records his observations on the development of the trypanosoma Gambiense in the tsetse fly (glossina palpalis) and other diptera. The trypanosomes at first multiply in the digestive tract, and only in this when the digestion of blood is proceeding. The appearances presented are represented by Mr. Minchin in several plates containing a large number of beautifully executed drawings. The above observations are contained in the March number of the *Quarterly Journal of Microscopical Science* for 1908.

SOME RESULTS OF THE "OPEN SPACES" MOVEMENT IN BIRMINGHAM.

DURING the past year or two the Birmingham Open Spaces Society has by its energy and determination forced itself prominently into public notice and has consequently been subjected to both criticism and praise. Now that the results of its efforts are becoming more obvious to the ordinary observer there can be little doubt that they will receive even fuller appreciation than in the past. Anyone who visits Tower-street and Musgrave-road, where recreation grounds have been recently opened, cannot but be struck with the advantages which must accrue from the action which has been taken. In 1906 the Open Spaces

Society presented to the city council a site of 1000 square yards in Tower street and at a cost of £282 it has been converted into a playing area which is enlivened and decorated by a fountain and an inclosure containing trees and shrubs. In Musgrave-road the city council purchased two acres at a cost of £2748 and by the expenditure of £1207 a miserable and depressing area has been transformed into a pleasant oasis. The lower part of the area has been made into a playground for children and the upper part into a lawn with flower-beds and trees. Thus at a comparatively small cost there have been placed in the midst of monotonous surroundings two pleasant open spaces where the older inhabitants of the surrounding dingy streets may enjoy greater breathing space and pleasant glimpses of grass, trees, and flowers, and the children will be able to expand their lungs with purer air and exercise their limbs with greater freedom. It is by well-advised policy of the type which has resulted in the provision of these two new lungs for Birmingham rather than by oppressive legislation that the ideal of life will be raised and many of our present infirmities swept away.

CROPPER v. STOKES: A JUDGE'S QUALIFIED APOLOGY.

WE commented strongly last week upon the action of his honour Judge Edge, who inferentially accused Dr. Henry Fraser Stokes, a well-known Highbury physician, of perjury in giving evidence in the case of Cropper *v.* Stokes. The accusation was a careless and cruel one and was made infinitely worse by the refusal to Dr. Stokes of the right to appeal against the decision given, thus depriving him of the chance of contradicting the opinion of the judge that he was a thoroughly wicked and disreputable person. A qualified apology has been obtained from Judge Edge under considerable pressure. A memorial was presented to him at the Clerkenwell County Court on Monday last signed by influential members of the medical profession pointing out how impossible it was that Dr. Stokes could have committed perjury. Mr. H. F. Dickens, acting for the Medical Defence Union, read the memorial to Judge Edge who said that in the course of his experience he had never heard of a similar proceeding. Judge Edge then said that he was pleased to get the memorial because if he had unintentionally done a wrong he was glad to be set right. He admitted that upon reflection the evidence given by Dr. Stokes before him upon which he had commented so strongly now appeared to have been given under misapprehension but in the belief that it was true. He could not have said much less or made a less strenuous attempt to remove from Dr. Stokes the slur of a particularly grave accusation. The memorial was in his hands two days before it was read in court and his honour's reply was made, we understand, from a written document. But such as this reply is, it forms an apology and we congratulate Dr. Stokes upon receiving it. Fortunately all who know Dr. Stokes knew that the judge had made a grave error.

THE LATE DR. JAMES BELL.

THE death occurred at his Hove residence on March 31st of Dr. James Bell, C.B., D.Sc., Ph.D., F.R.S., who for 19 years—from 1875 to 1894—was the principal of the Somerset House Laboratory after being deputy-principal for seven years. Born at Armagh in 1825, he was thus 83 years of age. He was at first educated privately and later gained the honour of gold and silver medallist in chemistry at University College, London. While holding the position of deputy-principal of the Somerset House Laboratory he was appointed, in 1869, as inspector of lime and lemon juice for the Board of Trade. This appointment he held for 25 years—from 1869 to 1894—and for the same period he was consulting chemist to the Indian Government. From 1875 to 1894 he was chemical referee under the Sale of Food and Drugs Act, and from 1888 to 1891 was president of the Institute of Chemistry. He was made a C.B. in 1889. Dr. Bell published in 1883 "The Chemistry of Foods," a well-known work on original researches. It was adapted as a handbook for the South Kensington Museum and was translated into German.

MARCH AT HOME AND ABROAD.

—	Highest temperature.	Lowest temperature.	Mean maximum temperature.	Mean minimum temperature.	Mean temperature.	Range of temperature.	Days with rain.*	Total fall.
	°	°	°	°	°	°		ins.
Scilly	55	36	50	42	46·0	8	17	3·25
Jersey	53	31	49	37	42·8	12	14	3·25
Plymouth	55	32	48	38	42·9	10	17	4·09
Torquay	54	29	49	38	43·2	11	12	2·95
Weymouth	55	22	47	36	41·6	11	11	2·37
Bournemouth ...	57	38	48	35	41·4	13	15	3·16
Sandown	58	30	49	37	42·7	12	15	2·71
Brighton	50	28	45	36	40·8	9	11	1·72
Bath	57	24	47	33	40·3	14	12	2·72
Harrogate	55	26	44	32	38·0	12	17	3·70
Manchester	56	27	46	35	40·3	11	10	2·29
Nottingham ...	57	22	46	33	38·5	13	14	2·56
London	57	29	47	36	41·5	11	10	2·07
Paris	57	26	48	33	40·7	15	14	1·84
Brussels	55	27	45	33	39·0	12	15	1·28
Berlin	59	27	45	33	38·9	12	12	1·75
Nice	61	30	53	39	46·0	14	7	3·28
Genoa	65	39	55	45	50·3	10	13	4·66
Florence	64	30	54	40	47·0	14	11	2·97
Rome	64	30	57	41	49·0	16	10	2·25
Naples	64	39	57	45	51·0	12	10	3·31
Palermo	70	36	61	45	53·1	16	12	3·36
Malta	65	48	60	52	56·0	8	8	1·27
Algiers	73	43	62	49	55·7	13	16	5·40
Biarritz	61	34	53	41	47·3	12	13	5·52
Lisbon	70	41	59	47	52·8	12	7	1·80

* A day with at least 0·04 inch.

Contrary to the usual course of events the temperature in this country made a retrograde movement during March and its general level was not only below the average but also below that of the month immediately preceding. Over the southern regions of Europe, however, although the climate was not at all warm for the time of year, it was less cool than during February. Both at home and abroad rain was of frequent occurrence, the only exceptions being at Nice, Malta, and Lisbon. At Nice the seven days with rain shown in the above table represent the only rainy days which that resort has experienced during the present year. Along the south coast of this country the sunshine was rather above the average duration, the highest figures being 149 hours at Torquay and 150 hours at Sandown, Isle of Wight. The Scilly Isles had exactly the same mean temperature as Nice but while at the French resort the average day was as mild as 53° and the average night as cold as 39° the corresponding figures at Scilly were 50° and 42°. On the south-western coast of England, Torquay, with a mean temperature of 43·2°, was the mildest, but Plymouth was very little cooler, and Sandown, I.W., had a mean of 42·7°. At Biarritz the nights were rather cool, cooler than during February, and the mean temperature, 47·3°, only a trifle higher than the inland resort of Florence. The highest mean temperature and the mildest nights were experienced at Malta, and the diurnal range of temperature was only 8°, the same as that at Scilly. Among the inland

places in the north London was the mildest and Harrogate the coldest, while Manchester and Bath were very little colder than Paris and milder than Berlin and Brussels.

IMPURITIES IN AIR.

THE interesting researches of Professor William Thomson, F.R.S. Edin., into the amount of carbon dioxide in Manchester air and in buildings under different conditions, of which he gave an exposition at the meeting of the Manchester and Salford Sanitary Association, call for more than a bare mention. They grew out of the request of the Sanitary Association for a simple method of estimating the carbonic acid gas in public and other buildings, and the device contrived seems simplicity itself. The air is forced into a bottle with an ordinary pair of bellows and then submitted to a simple chemical test. The results of the analyses of air from various buildings taken sometimes when occupied and sometimes when empty are at times unexpected, and these researches not only widen our knowledge of facts but lead to a better understanding of the principles that should underlie schemes of ventilation. Modern architects, it seems, accept as permissible in buildings 6 parts of carbon dioxide in 10,000 but the variations from this standard are very wide. The lowest example given is from schools at Macclesfield where the range was 1·4, 3·5, and 6·1 in 10,000. In Manchester two boys' schools gave 11·2 and 11·7, and one of the girls schools gave 14·9, while two rooms in another school gave respectively 12·8 and 8·3. In a school at Openshaw the boys room showed 18·2 and the girls' room 11·5. The recently built Technical School came out better, giving 6·5 per 10,000. In a Nonconformist chapel near Manchester the air after service yielded the very great proportion of 44 parts of carbon dioxide per 10,000. In a concert hall 5·2 before a performance became 11·2 after one and a quarter hours, and so on. One interesting and important fact brought out in these experiments is that the sense of comfort and satisfaction experienced does not depend altogether on the proportion of carbonic acid gas present, for though the Technical School is one of the best ventilated buildings in the city many people find the air objectionable from its "lack of invigorating qualities," and this Professor Thomson believes to be due to the method of washing the air that is employed. That this is probably true appears from experiments made as to the effects of breathing dry or damp air, for it was discovered that "thoroughly dried air has a much more powerful oxidising influence on the blood than air that has not been dried, and that this effect is increased by heating the air." He referred to the air of the House of Commons having "a peculiarly flat taste"—though that does not appear to prevent it being much sought after—to its not being invigorating, and to the prevalence of influenza among the occupants. This he considers due to the air being washed in water as it is forced into the House and suggests that it would be much healthier and pleasanter to breathe "if it were passed through strong vitriol or some substance that would absorb the moisture." Other interesting points were brought out. The amount of carbon dioxide exhaled with the breath is usually given as about 4 or 5 per cent., but Professor Thomson found that "it depended on the quality of the air by which he was surrounded." Thus in Manchester a lower percentage of carbonic acid gas was given off than in the country, at the Buxton golf links, 1000 feet, and still more at the Cat and Fiddle, 1700 feet above sea level. But the idea that altitude influenced the amount of gas exhaled was not borne out, as equally good results were obtained at Blackpool. Professor Thomson found that where the air was inhaled through the mouth the expired air was about 0·2 per cent. lower in carbon dioxide than when the nostrils alone were used, and this suggested the idea that if the air were heated artificially still greater oxidation would take place in the body. It was found that when air heated to 140 ° C. was breathed the exhalation contained 5·4 per cent. of carbon dioxide, while exhalation of unheated air from the same person gave 4·4. The average of a number of experiments gave 4·1 from ordinary air and 5·2 from heated air. It is curious, and not what many of us would have anticipated, to learn that when pure oxygen was breathed the exhaled air gave an average of 4·4 to 4·5, considerably below that found from breathing in country air, so that Professor Thomson concludes that the ideal combination for reviving people nearly drowned or asphyxiated would be obtained from warmed country air and oxygen. Dried and heated air has a much more powerful oxidising influence on the blood than damp air, for the moisture more than neutralises the effect of the warmth. To illustrate practically the application of the exposition to which the audience had listened, a sample of the air of the room in the town-hall where the meeting was held was taken by Professor Thomson's assistant before the people assembled and by Professor Thomson during his address, the first sample containing 6 parts and the second 19·8 parts of carbon dioxide in 10,000. These investigations help to explain some of the influences of climate and locality more clearly than before. As is well known, however, the carbon dioxide is not the only cause of mischief from bad ventilation, the animal matters given forth with the breath being still more deadly. It is much to be hoped that Professor Thomson's paper will be carefully considered and its lessons acted on by architects, school managers, and all who are interested in the sanitary welfare of he people.

DIAGNOSIS OF CANCER OF THE CENTRAL NERVOUS SYSTEM BY LUMBAR PUNCTURE.

AT a meeting of the Société Médicale des Hôpitaux of Paris on Feb. 28th M. F. Widal and M. P. Abrami reported a case in which cancer of the central nervous system had been diagnosed by lumbar puncture, a new and interesting application of this means of diagnosis. A laundress, aged 47 years, was admitted into hospital on Oct. 19th, 1907. Three days before whilst at work her legs suddenly gave way and her left arm became paralysed. She did not lose consciousness and got up in a few minutes with paralysis of the left leg, arm, and face. Examination showed left inferior facial paralysis and complete flaccid paralysis of the left arm and leg. The plantar reflex was of the extensor type. Sensibility was intact. There was nothing to show the cause of the hemiplegia; no symptoms had preceded it. Lumbar puncture yielded perfectly clear cerebro-spinal fluid, the tension of which was not increased. Centrifugalisation gave an unexpected result: instead of the lymphocytes found in various affections of the central nervous system the deposit was almost entirely composed of cells which in size, structure, and appearance of the nucleus had all the characters of cancerous cells. In the fresh state without staining they were seen to be rounded and huge; the smallest were four or five times the size of a polynuclear cell. The greater part of the cell was occupied by a vesicular rounded nucleus containing several very refractile nucleoli. The protoplasm of the cells was clear and in a great number contained numerous vacuoles; others were full of large granules. Some appeared to be in a state of karyolysis. The cells gave the glycogen reaction. In stained preparations numerous cells were found to be in a state of karyokinesis. The cerebro-spinal fluid contained a high proportion of sugar—four grammes to the litre. Clinically the case appeared to be an example of ordinary hemiplegia but the examination of the cerebro-spinal fluid showed that it was

due to cancer of the brain. This appeared to be secondary to cancer of the stomach, for a lobulated tumour was found in the epigastric region. The gastric cancer was almost entirely latent. Questioning of the patient showed that slight pains had begun two months previously and that she occasionally vomited. Her condition remained stationary until Oct. 24th when the temperature rose to 104° F. and she suddenly became comatose and died in a few hours. On opening the cranium the brain and its membranes appeared normal. In the left internal capsule was a greyish-yellow spot one centimetre in height and one and a half centimetres in breadth with a finely indented contour. Serial sections showed that it extended for a distance of three and a half centimetres, invaded the optic tract, and abutted on the ventricle. The remainder of the central nervous system was normal. Microscopic examination of the cerebral growth showed that it was composed of cells similar to those found in the cerebro-spinal fluid. There was also a large cancer of the stomach with secondary growths in the omentum, mesentery, liver, kidneys, lungs, and mediastinum. In the heart a very rare lesion was found, a fungating cancerous growth of the size of a large pea on the posterior sigmoid valve similar to the growths found in infective endocarditis. Microscopic examination showed that this growth had the same structure as the vegetations of infective endocarditis with the difference that microbial infiltration was replaced by infiltration of cancerous cells. The growth was composed of filaments of fibrin inclosing masses of cancer cells. It is noteworthy that leucocytes were absent from the cardiac growth and also from the cerebro-spinal fluid, although the cancerous cells played the part of infecting elements.

PARISIAN MEDICAL MEN IN THE SIXTEENTH CENTURY.

AT a recent meeting of the French Academy M. Babelon called the special attention of the members to a work by M. Émile Rivière which contained the first portion of a "Histoire de la Médecine à Paris, au XVIe. Siècle, et ses Praticiens." These latter include ordinary medical men, barber-surgeons, medical students, and apprentices to the barber-surgeons. The materials for the treatise are almost all derived from the "Recueil d'Actes Notariés" relative to the history of Paris and its environs from 1513 to 1545. These archives furnish particulars of cases which came under the supervision of the Paris Faculty of Medicine, especially in 1528 and 1541; also of certificates of the occurrence of certain diseases, of indentures of apprenticeship to celebrated barber-surgeons, and of certificates of competency and permission to exercise the profession of surgeon. This portion of M. Rivière's book terminates with a list of 83 practitioners of the remedial arts, most of them citizens of Paris, together with their professional titles such as "docteurs regents"; premiers médecins, or médecins ordinaires du roi; chirurgiens jurés, and others, adding also their Paris addresses and the signs which they were entitled to suspend outside their residences. Among these medical men appears Master Charles Estienne, brother of the celebrated printers and publishers of Paris. This gentleman dwelt, in 1542, in the Rue Sainct Jehan de Beauvois, at the sign of King David, and appears to have had a large practice.

Mr. Arthur Ferguson MacCallan, M.B., B.C. Cantab., F.R.C.S. Eng., chief ophthalmic inspector in the Public Health Department of the Egyptian Government, has received His Majesty the King's Royal Licence and authority to accept and to wear the Insignia of the Third Class of the Imperial Ottoman Order of the Medjidieh conferred upon him by His Highness the Khedive of Egypt in recognition of valuable services rendered by him.

A COMMUNICATION from the Colonial Office dated April 1st states that during the week ended March 28th the Governor of the Gold Coast has reported 2 deaths from plague near Oblogo. There have been neither cases of, nor deaths from, plague at any other place in the colony. The Department of Public Health of Queensland, in a bulletin dated Feb. 29th, states that no case of plague has occurred in Brisbane since Feb. 7th.

MOTORING NOTES.

BY C. T. W. HIRSCH, M.R.C.S. ENG., L.R.C.P. LOND.

BY the kind invitation of Mr. Johnson, of Messrs. Humber, Limited, I recently had a trip in a 10–12 horse-power Coventry Humber, and I must say that though I have used a car now daily for over eight years I have never more thoroughly enjoyed a drive. The car, which seems an ideal one for a medical man, is only just over 11 feet long and so permits of easy manipulation, and as a leather hood and front wind screen are fitted there is complete protection from rain and wind. The silence of a Humber is proverbial and is secured by the use of a four-cylinder engine which, of course, makes starting a very easy matter, certainly an important point for a man who drives himself. In the old days I well remember frequently letting a Benz that I then had thunder away while paying a professional call, so as to avoid having the bother of opening the back and spoiling either my gloves or making my hands filthy in pulling the fly-wheel round, and it did require pulling; now this little Humber nearly always starts on the switch and only occasionally does it need a turn of the starting handle. I found that by opening the throttle fully and then switching off, the engine invariably started when the electricity was turned on, and I can with feeling say that this is a boon. The engine has a 3¼ inch bore and a 3½ inch stroke and is usually run at a speed of about 1200 revolutions per minute. Lubrication is by splash in the crank chamber, the oil being delivered by hand pump on the dash-board, a drip sight feed being fitted for the pump spindle as well as for the clutch and gear box. The makers realising the importance of thorough attention to proper oiling and the unfortunate fact that the general public do not pay much regard to it, issue a sheet with each car sent out, showing those points that need daily visits from the oil-can, as well as such as require but an occasional drop. There is little question that well-designed automobiles need little attention beyond periodical and thorough lubrication, and though a great deal is automatically carried out, still there are many parts that cannot be so greased and it is the owner or driver who makes this duty a matter of methodical inspection, counting off each item as it is attended to, who is free from involuntary stops and whose car works the smoothest and is not a frequenter at the motor doctor's. The great thing is to use good oil and to see that it reaches the parts it is intended to. Lubrication pipes are all the better for an occasional clean out with the tyre pump or by taking them down and holding the centre of the pipe over a gas flame, as the heated air cleans by driving out foreign bodies, such as dirt, dust, and thickened dried oil. On some of these cars the oil is forced by pressure from the exhaust, and naturally, if the pressure-conveying pipe is blocked the oil is not speeded on its way. On this latest type (Humber) a pump lubricator is fitted and driven by a band from the two to one shaft, but either form is successful provided it receives occasional attention. The driving band may break or become too slack, simple disorders that once seen can be quickly remedied. The carburettor is the new type of Longuemare and seems to give a perfect mixture at all engine speeds; it has a hand air regulator, which is an advantage as by its use the mixture need never be "too rich." I certainly do ascribe the now general need of taking off the cylinder covers so as to remove soot deposit to the modern automatic carburettor, which so easily gives too rich a mixture, with resulting carbon deposit on the piston or in the combustion head. This deposit readily

becomes incandescent and ignites the mixture prior to compression, with consequent overheating and loss of power. The frequent taking down of the cylinders for removal of this deposit by scraping is a trouble and the new type of Longuemare carburettor cures by the best method—that is, prevention—the avoiding of too rich a mixture. The perfect cooling of a petrol engine is perhaps the greatest feature in a car, as overheating is the bugbear of all cars. It causes excessive expansion of the incoming charge, so a full one is not admitted. In addition, the excessive heat results in premature ignition and so the mixture is exploded before it is compressed, with the consequence that there is loss of power and, furthermore, the lubricant is burnt up and so the piston may seize or a connecting-rod break—all interesting but unpleasant pathological events. The Humber is well guarded against such disasters. An improved honeycomb radiator with a fan at the back is fitted and there is a positively driven rotary pump of ample proportions fitted with a filter and placed so that it can be easily dismantled for cleaning. I took the car up some really bad hills, ascents to which Shooter's Hill, Netherhall Gardens, and even River Hill at Sevenoaks are nothing, and I must say that it mounted them all easily and, what is more, without the engine showing any signs of "heating."

Probably more stops are due to ignition functional disorders than to any other, and though I know that such an authority as Mr. S. F. Edge does not consider two ignition systems desirable, still as it is not always convenient for a medical man to stop on the road if an electric fault occurs I strongly advise my professional brethren, if possible, to have two separate means of exploding the mixture. The Humber can be fitted both with high-tension magneto and high-tension coil and accumulator, so in the, I admit, unlikely instance of one failing, instead of having to stop, the other can be switched on, which I am sure is an advantage. Of course, the accumulators must be kept charged and the tremblers on the coil adjusted, and so it is as well to make a rule to start the engine up on the coil and accumulators and afterwards to turn on the magneto, and this too makes the starting much more easy and in addition insures that the accumulators are kept charged. The drive is by the now popular cardan shaft and "live" axle and perfect running is obtained by the driving shafts and bevel pinions being mounted on ball bearings, ball thrust bearings being also fitted, and as a result of the firm's long experience in the bicycle trade their knowledge of ball bearings is probably unique and their car bearings have obtained a similar fame to that of their cycle bearings. A leather-faced cone clutch is provided, but in their 30 h.p. metallic discs running in an oil bath are fitted. Perhaps on high power cars the multiple disc may be desirable, but I have always found a leather-faced one satisfactory, provided that it receives an occasional dose of collan oil, and with care the leather should last for many a year, and in addition if it has to be replaced it is easily done. The side brakes are of wood fibre and spring steel working on a flanged brake drum of large diameter and width, and the foot brake is metal to metal, the drum being between the rear gear box bearing and universal joint. The adjustment is by a winged nut which can be turned by hand. All are operated by rods, certainly an improvement on the old-fashioned cable. They are most powerful, and I gave them a good test on a really bad hill and found either of them capable of stopping and holding the car on a gradient of 1 in 5 in both directions. I understand that this car is sold fitted with a Cape-cart hood at about £250, and at this price it is well worthy of the consideration of the profession. It certainly rides most easily, which is, I believe, greatly due to the transverse rear spring.

A matter that is likely to affect all motorists is the proposal of the Royal Commission regarding the future taxation of cars. As Dr. H. E. B. Bruce-Porter, who is the honorary secretary of the committee of medical men using motor-cars, remarks, it is perhaps too much to expect the Government here to treat medical men as they do in Germany, where it is accepted that as the profession do so much gratuitously the medical man should receive some recognition and so his car is exempt from taxation. Still, it does seem but fair to put forward the suggestion that even though a medical man may use his car for a short holiday, still he should be merely taxed at trade rate. I am sure that the public as well as the profession would welcome this acceptance of the work which the profession do, and do without even thought of a fee. In hilly districts a medical man must have a powerful machine, and the proposal is that if it weighs over 15 cwt. he should pay £5 5*s*., whereas under that weight it is but £3 3*s*. It certainly seems hardly fair to have to pay £2 2*s*. a year extra because the neighbourhood is hilly. The motor is not only the pastime of the rich, as those who motor about can see; there are many motorists of moderate means and a heavy tax is bound to decrease the number of cars kept by this class, and surely this will affect what is now becoming, if it has not already become, a great industry—the manufacture of cars. Let us trust that the Government will give this matter deep consideration before it accepts the proposal of the Royal Commission. Mr. Leveson-Gower has propounded an original scheme as a basis for taxation. He quite correctly argues that the motorist should pay according to the mileage he covers, and, as he says, the outer covers of the tyre are to a great extent an index to the distance covered, so he suggests that the tax should be collected from the tyre maker or importer and each tyre bear a Government stamp. It will be a cheap tax to collect and if it becomes law I rather think that I shall get my tyres retreaded more often than I do at present, and I believe my fees for visiting in a road that contains unrolled stones will increase. Perhaps this tax would help in reducing excessive speed, for road racing does more than anything else to wear out tyres, so it will come rather hard on professional men receiving many urgent calls.

Everyone is now fond of talking of the individual known as "the motorist of moderate means," and I take it that the average medical motorist may well claim to come under this category. Tyre bills have always been a formidable item in the cost and upkeep of a car, and it will be welcome news to all that tyre makers are now reducing their prices. The Continental Tyre and Rubber Company, Limited, who at their Hanover works alone employ over 5000 hands, are, as a result of the reduction in the price of raw material and their great facilities for manufacture, making substantial reductions not only in the ordinary motor tyres but also in their armoured studded non-skid type. The advantage of this is that not only may tyres of a larger size than usual be fitted on new cars at no increased cost over that which obtained previously, but also non-skids on the rear wheels. Speaking from experience, I can say that a larger-sized tyre, especially on the driving wheels, is a great economy. Many cars are fitted with the 810 mm. by 90 mm., but with the present reduction 810 mm. by 100 mm. can be substituted, especially as they fit the same rims. It is most surely always better to use tyres of a stronger pattern than absolutely necessary; they last much longer and are not so liable to cut. The use of non-skids, if merely as a sort of moral comfort, is an advantage; the knowledge that skidding is not likely to disturb the harmony of a drive does give greater confidence, especially if the owner is his own driver. I recently had an example of this "psychological effect." A friend in wet skiddy weather drove me from the suburbs of London to the West-end in his car and on our arrival remarked: "I should not have been able to do this without non-skids," when, to his astonishment, he discovered that the non-skids had, unknown to him, been taken off by his man and that he had driven on ordinary round treads. Still, non-skids in traffic are an advantage, and the Continental Red-Black 1908 pattern, in addition to absolutely preventing skidding, greatly reduces the chance of puncture as they are practically covered with steel. The studs are fixed in the tyre without the aid of leather by patent discs, immediately under the head of the rivets, and if only the tyre is kept well pumped up it is impossible for the studs to become loose or torn out; the great thing is to keep the tyre fully inflated.

Some unconsidered points in the wear of tyres have recently been brought out by Mr. Mervyn O'Gorman in a paper read by him before the members of the Royal Automobile Club entitled "A Number of Things and their Effect on Tyres." Undoubtedly, he has shown that both in chain-driven and, to a certain extent, in shaft-driven cars the distance or torque rods do not keep the drive constant when the car moves up and down on its springs, and thus there is an irregular drive to the road wheels and consequent rub and wear of tyres. In some cars, such as the excellent little Humber, the push is taken by the springs, radius rods being done away with, but in these the flattening of the springs gives a further movement backwards to the axle and this movement is additive.

Mr. O'Gorman suggests in chain-driven cars to alter the sprockets and have the small one on the road wheels and the larger one in front, the ratios in the gear box being increased to compensate; thus there are two skids simultaneously and in opposite directions which cancel one another, and in shaft-driven cars he proposes to overcome the difficulty by employing two universal joints and a parallelogram of radius rods. Certainly, even if this makes the car dearer, the saving in tyre wear will make up for the additional primary cost. He also advocates a most important matter—care in letting in the clutch and discretion in the use of the brakes, all points which if attended to help to keep down tyre expense.

While recently touring I came across a fellow motorist on the road who was stuck up by a broken valve spindle. He had a spare one but seemed to have a difficulty in replacing the spring, and as the following wrinkle was not known to him I am giving it in case there are others to whom it may be also new. Compress the spring in a vice, or if you have not one handy an ordinary coach-house or shifting spanner will do. When it is compressed tie it with either a bit of string or wire, so that it cannot expand; it can then easily be put into position, and after the key is put in the wire can be clipped or the string cut. This dodge can, of course, also be used for clutch springs.

PETER OF ABANO.

BY CUTHBERT E. A. CLAYTON,

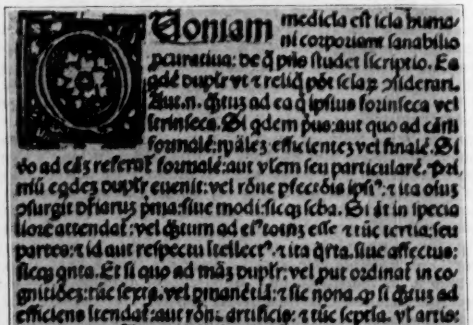
LIBRARIAN TO THE MANCHESTER MEDICAL SOCIETY AND OF THE MEDICAL LIBRARY, UNIVERSITY OF MANCHESTER; SOME TIME IN THE LIBRARY OF THE ROYAL MEDICAL AND CHIRURGICAL SOCIETY OF LONDON.

OF the many physicians who flourished during the latter half of the thirteenth century and the beginning of the fourteenth century none gained a more widespread reputation than Peter of Abano, or as he was called Petrus de Abano. Born in 1250 at Abano, a village near Padua, the son of a notary, he soon gave evidence of an exceptional ability for study, and the earliest record we have is that of his leaving for Constantinople in order to devote his energies to the study of Aristotle; it is even said that he travelled into Greece for this purpose. Like so many students of his age he wandered from *studium* to *studium* until he reached Paris, where he settled for some years, devoting himself to medicine and mathematics, a combination rendered necessary by their common relationship to astrology. Astrology was an important part of a doctor's equipment. In addition to these three subjects he applied himself to physiognomy, geomancy, and cheiromancy, but with the advance of years he laid them aside.

The greater part of Peter's work was done whilst in Paris, a period extending from 1292 to 1303. He graduated in medicine, lectured on philosophy, wrote the "Decisiones physionomicæ," the "Conciliator," and commenced the "Expositio problematum Aristotelis." Of course, all these works were in MS. form, printing being an invention of 150 years later. Immediately on the appearance of the "Conciliator"—probably in 1303—the Dominicans accused its author of magic and heresy. Peter, however, defended himself brilliantly, confounded his accusers, and hastened to Rome, receiving from Pope Boniface VIII. a decree of absolution. Year by year Peter's reputation as a physician had spread throughout Europe. In 1306 he returned to Padua at the invitation of the University, where a chair of medicine is said to have been founded for him. Whether he previously, concurrently, or ever held a chair at Bologna, as has been stated, is uncertain, but I think it is improbable. The University at Padua came into existence in 1222, "when gown and town" warfare raged furiously in Bologna, resulting in a partial migration of the staff; such an act would not be lightly forgiven.

In Italy almost supernatural powers were credited to Peter and in 1306 he was brought before the Inquisition on the old charges of magic and heresy. For the second time the Dominicans were his accusers, now undoubtedly strengthened by the fact that Boniface VIII. had been succeeded by one of their own order, Benedict XI. However, it only added to the great reputation of the accused, for with great ability he proved his innocence. Eight years later he came into collision with the Church for holding heretical views on the resurrection of the dead, the existence of the devil, and miracles. Peter's good fortune remained with him until the end, for he died in 1315 before the completion of the trial, and was buried with great pomp in Padua. The inquiry was continued, its subject was found guilty, and it was resolved that his body should be exhumed, publicly burnt, and his property devoted to the use of the Church. What exactly happened is uncertain. The General of the Augustinians wrote: "He lied in his iniquity and received the reward of his error, for I was present when his bones were burnt in the city of Padua for these and his other heresies." Another version is that a faithful servant, informed of the sentence, disinterred the body during the night and transported it to another church necessitating his being burnt in effigy.

The more important literary remains of Peter of Abano are the following: "Decisiones Physionomicæ," "Expositio problematum Aristotelis," "Conciliator differentiarum philosophorum; præcipue medicorum," "Tractatus de venenis," "Quæstiones de febribus" (in a work "De febribus"), "Textus Mesue emendatus," and "Geomantia." He also edited and translated several Greek and Hebrew works. Unlike Vesalius or Mundinus, he added little to contemporary knowledge and undoubtedly owed his popularity to the controversial nature of his writings. His chief book, the "Conciliator," and the one to which he owed his reputation and sentence, was first published at Mantua in 1472, about 20 years after the first book printed with moveable type. I have been unable to refer to a copy of this edition. The Manchester Medical Society possesses a copy of the Venice edition of 1496, a folio of 265 leaves, which include the "Tractatus de venenis." It is printed in Gothic type in double columns. The printer was Octavianus Scotus, a native of Modena, who opened his press at Venice in 1480, founding one of the largest printing and publishing houses in that city. The accompanying passage is reproduced from a photograph of a portion of the Prologus:—



Quoniam medicina est scientia humani corporis ut sanabilis procurativa de qua praesens studet inscriptio. Ea quidem dupliciter ut et reliquae possunt scientiarum considerari. Aut enim quantum ad ea quae ipsius forinseca vel intrinseca. Si quidem prius aut quo ad causam formalem, materialem, efficientem vel finalem. Si vero ad causam referant formalem aut universalem seu particularem. Primum equidem dupliciter evenit, vel ratione perfectionis ipsius et ita omnium consurgit differentiarum prima, sive modi sicque secunda. Si autem in specialiore attendant vel quantum ad eius totum esse et tunc tertia seu partes et id aut respectu intellectus et ita quarta, sive affectus sicque quinta. Et si quo ad materiam dupliciter vel prout ordinatur in cognitionem tunc sexta, vel permanentiam et sic nona quae si quantum ad efficiens intendant aut ratione artificis et tunc septima, vel artis sicque octava. Si vero ad finem referant ipsius

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*** Without the contractions the above passage stands thus in transliteration, and we must express our thanks to Dr. L. G. Guthrie and Miss E. J. Lewis for help in the same:—

Quoniam medicina est scientia humani corporis ut sanabilis procurativa de qua praesens studet inscriptio. Ea quidem dupliciter ut et reliquae possunt scientiarum considerari. Aut enim quantum ad ea quae ipsius forinseca vel intrinseca. Si quidem prius aut quo ad causam formalem, materialem, efficientem vel finalem. Si vero ad causam referant formalem aut universalem seu particularem. Primum equidem dupliciter evenit, vel ratione perfectionis ipsius et ita omnium consurgit differentiarum prima, sive modi sicque secunda. Si autem in specialiore attendant vel quantum ad eius totum esse et tunc tertia seu partes et id aut respectu intellectus et ita quarta, sive affectus sicque quinta. Et si quo ad materiam dupliciter vel prout ordinatur in cognitionem tunc sexta, vel permanentiam et sic nona quae si quantum ad efficiens intendant aut ratione artificis et tunc septima, vel artis sicque octava. Si vero ad finem referant ipsius

decima consurgit inde. Si autem quantum ad intrinseca dupliciter aut quo ad theoricam seu practicam et reliqua. Ideo si quidem sufficiendae modus ceteris posset adaptari quaesitis, ut quorundam est studium. Sed quia potius curiositatem cum prolixitate adducit quam utilitatem in his idque deinceps omittatur quaesitis.

We are indebted to the Rev. H. Lucas, S.J., of Stonyhurst College, for assistance in the following paraphrase. The meaning of the text is in one place at least obscure:—

The object of the science of medicine is the human body, as capable of cure. Like the other branches of learning, it may be considered from two points of view—namely, the intrinsic or the extrinsic. Of these two, the former may have reference severally to the formal, the material, the efficient, and the final cause. The formal cause—i.e., the quality of "curableness," if considered generally, may be regarded either (1) in relation to the perfection itself, i.e., health, and so we arrive at the first division, the "prima differentiarum," of the subject, or (2) in relation to the way in which the perfection is to be attained (*modus*). But if taken more specially it may be regarded (3) in its entirety, or (4) as to its intellectual, or (5) its affective side. (This passage is very obscure.) With regard to the material cause, the body (?), this may be regarded either (6) as an object of diagnosis or the knowledge of its present state or defect, or (9) with reference to the normal or permanent state to which it is to be brought. The efficient cause of health is (7) the medical man (*artifex*), and (8) his drugs, rules for their use, &c. (*ars*). The final cause is (10) health.

It will be noted that Petrus skips from No. 6 to No. 9 for no apparent reason. The "four causes" above mentioned are the Aristotelian causes. In the Middle Ages a great deal of ingenuity was expended on treating all manner of subjects in the light of this fourfold causality. Petrus, however, seems to have had an idea that arguments of this kind were not altogether commendable, for it will be noted that the passage which we have quoted concludes, "But as this discussion tends rather to vain and wordy disputation than to any useful purpose, let us here cease from our inquiry."—ED. L.

THE UNITED HOSPITALS CONFERENCE.

THE third United Kingdom Hospitals Conference was held on April 1st and 2nd at University College, Gower-street, London, W.C., under the chairmanship of Mr. CHARLES LUPTON, chairman of the General Infirmary, Leeds. There was a large representative attendance.

Eligibility for Hospital Treatment.

On the opening day, April 1st, Mr. H. C. GOSNELL (City of London Lying-in Hospital) in discussing this question argued that poverty or want of means should not be considered the only test in determining a patient's inability to pay for hospital treatment. Among the middle classes, and particularly the lower middle classes, there were a large number of persons who wore black coats and who showed no external evidence of poverty, yet who were equally as deserving of the benefits of charitable institutions as the labouring classes. As an amendment to the proposal discussed at the last conference—namely, "That inability to pay should be the consideration for the admission of all patients," he moved—

That in determining the question of the suitability of patients for admission into hospitals, particularly with reference to their inability to pay for adequate treatment, poverty or want of means should not be deemed the only test of the patient's eligibility for admission, but persons should be deemed eligible whether they belong to what are termed the working or industrial classes or not, if, owing to their obligations being disproportionate to their means, they are unable to pay for the professional services of a medical attendant.

Mr. R. B. DOBSON (Brighton) seconded the amendment which on being put to the vote was lost. The original proposal discussed at the last conference was therefore endorsed by the present conference.

Gratuitous Treatment in Compensation Cases.

Mr. HARRY JOHNSON (Leicester Infirmary) moved:—

That it is desirable to supply gratuitous hospital treatment to those who are provided for by the Workmen's Compensation Act.

He pointed out that it would be wrong to deprive persons receiving benefit under the Workmen's Compensation Act, which could not exceed £1 per week, of the help which they would otherwise receive. The best way to obtain payment from the working classes was to ask them to contribute during health.

Dr. J. A. MACDONALD (Taunton) urged that the hospital almoner should deal with cases on their merits. He said there were instances in which men who came under the Act received substantial sums weekly from friendly societies.

Mr. J. H. SHAW (Southport) said that the rule of making a patient able to pay or the person whose negligence caused the accident refund the cost of the treatment had, at any rate in one instance, especially in regard to motor-car accidents, worked admirably.

On the suggestion of Dr. FRANK FOWLER (Bournemouth) the words "whom the hospital board shall consider unable to pay for medical attendance" were added to the original proposal and the motion as amended was adopted.

Payment for Food and Medicine.

Mr. SYDNEY HOLLAND (chairman of the London Hospital) moved:—

That where they can afford to do so hospital patients ought to be asked to pay for the food, medicines, and bandages supplied to them.

All hospitals, he said, especially London hospitals, were in a serious financial position. Hospital authorities were making a great mistake in not asking patients whether they could afford to contribute towards their treatment. It was economically unsound to give everything to everybody for nothing, whether they could afford to pay or not. At the London Hospital last year 157,000 persons paid sums representing £2000 without any pressure being put upon them. The charitable work of hospitals ought to be restricted to providing for the sick poor that help which they could not afford to pay for themselves.

Mr. W. CARNT (Manchester Royal Infirmary) said a large proportion of the in-patients at his institution paid sums ranging from 2*s*. 6*d*. to 7*s*. 6*d*. per week. By this means £1000 or £1200 a year were added to the income of the Royal Infirmary.

Mr. R. CAPES (chairman of the South London Hospitals Committee) said if the hospital authorities would reduce the number of out-patients by sending trivial cases to the general practitioner they would have enough money for their other requirements.

Dr. HENRY DAVY (President of the British Medical Association) opposed the proposition and said the question of payment raised that of the whole charitable hospital system of the country. He preferred the German system of municipal hospitals.

Dr. G. A. HERON (City of London Hospital for Diseases of the Chest) said the sooner reliance on State support of hospitals came the better. This system of payment, small though it was, struck at the root of all true charity. There was the greatest difficulty in separating those who were necessitous from those who were not. He knew of people in receipt of £800 per annum who habitually used the out-patient department of free hospitals.

Mr. R. G. PATERSON (Glasgow Eye Infirmary) said the working class who supported that institution looked upon treatment as a right and to ask for payment would shut off a large portion of their income.

Dr. E. L. FOX (Plymouth) supported the proposal.

Mr. SYDNEY HOLLAND said his hospital had never lost a farthing support in consequence of making a charge nor had the system either increased or decreased the number of patients. The class that the hospitals existed for was the class just above the necessitous poor. The clerk in receipt of £200 a year was a proper person for help but he ought to be asked to pay for the food, medicine, and bandages supplied to him.

The proposition was carried.

Investigation of Cases.

Lieutenant-Colonel MONTEFIORE (Charity Organisation Society) moved:—

That in the opinion of this conference the appointment of trained hospital almoners constitutes one of the best methods for checking the misuse of hospitals and for rendering more effective the economic value of an out-patient department.

This on being seconded was carried.

Payment by Patients at Cottage Hospitals.

On the second and concluding day, April 2nd, the proceedings commenced with the adoption of a proposition by Colonel J. G. CURTIS (Deal and Walmer Victoria Hospital) to the effect that some definite steps should be taken to ascertain the ability or the contrary of each patient at a cottage hospital to pay for his or her maintenance.

Hospital Accounts.

On the motion of Dr. FOX the committee was instructed to consider how the uniform system of accounts recommended

by King Edward's Hospital Fund could be made applicable to the requirements of provincial hospitals and to make recommendations to the next conference.

County Hospital Guilds.

Mr. R. H. KINSEY (Bedford County Hospital) discussed the organisation of county guilds for the support of hospitals, as in Bedfordshire, as an alternative to the extension of the work of the League of Mercy in the provinces. He proposed a motion approving of the scheme adopted by the Bedfordshire County Hospital. This institution supplied the hospital needs of an area containing 150,000 people. Every year it treated about 1000 in-patients and 5000 out-patients. The guild gave an opportunity to a large number of people to do good to their neighbours, it increased the annual income of the hospital by gathering in a large number of small subscriptions, and it increased the utility of the hospital by doing supplementary charitable work. Their idea was to secure in every little town and village throughout North Bedfordshire some representative of the hospital who would be constantly bringing its claims before his or her neighbours.

Lord AMPTHILL (chairman of the Bedford County Hospital) said the proposal was simply a measure for coördinating and systematising existing efforts in order to prevent overlapping and to secure that there should be an equal distribution over the whole area of all the public-spirited and philanthropic efforts which were already made. It was a decentralisation of effort and a concentration of control, giving to the smaller organisations all that additional strength which resulted from united effort. The scheme consisted of the division of the area into districts with responsible officers in each, people who had local knowledge and would take care that abuses would not occur.

Dr. FOX said that the time had come when the consideration of the King should be called to the condition of provincial hospitals, and he proposed an amendment on the subject which the CHAIRMAN ruled out of order.

After some discussion the following was adopted:—

That this conference has heard with interest of the scheme of the Bedfordshire Hospital Guild as a means of increasing local interest in the county hospital and extending its usefulness by promoting more intelligent efforts for the prevention of disease and for the better after-care of convalescents.

The Prevention of Tuberculosis.

The Rev. W. BLISSARD proposed—

That tuberculosis should be included among notifiable diseases, with a view to the isolation of such patients in publicly provided hospitals.

Tuberculosis, he said, was the scourge of modern civilisation. Hospital treatment for this disease was quite inadequate Tuberculosis might be looked upon as a condition resulting from all those activities which were building up the wealth and the prosperity of the nation. From this point of view he urged that public provision should be made for the accommodation of tuberculous patients, as the position was far beyond that which could be dealt with by voluntary effort and he made a strong appeal to public conscience and public power. The expense would probably be heavy, but unless some such proposal was carried out there would be a loss of lives which, if saved, would be of the greatest use in building up the national prosperity.

Dr. DAVY moved as an amendment:—

That the consideration of the propriety of the notification of tuberculosis be postponed, and that the Government be asked to appoint a commission to recommend the best way to deal with tuberculosis.

He said the notification of tuberculosis was a very complicated matter. Dr. H. T. Bulstrode, who had lately published the result of a long inquiry into the subject, had suggested that tuberculosis was dying out and would die out as sanitation improved. He (the speaker) was not at all satisfied, however, to leave things as they were. Roughly speaking, some 60,000 persons died from tuberculosis each year in the United Kingdom. People could not be willing to leave the subject alone when they believed that more than half of that death-rate could be prevented by carefully considered measures of prevention. Such measures should be carefully devised by a body of men who would be influential enough to command the respectful attention of the nation. This question affected every part of our national life and could not be dealt with as if it were a question merely of the notification of the disease. He suggested that a body of influential unbiased men, laymen and medical men, should consider the question, and they could only be called together by a Royal Commission.

The amendment was seconded by Dr. HERON and, being accepted by the Rev. Mr. BLISSARD, was carried unanimously.

Medical Men and Hospital Boards.

Dr. J. FORD ANDERSON proposed:—

That with the view of securing the cordial support of hospitals by medical practitioners, it is desirable that they should nominate representatives for election to boards of management of hospitals in their respective localities and that such nominations should be carried out by an organised professional body, such as a division of the British Medical Association.

Mr. MANSFIELD, M.P. (General Hospital, Northampton), opposed the proposal which on being put to the vote was lost.

On the proposal of Dr. T. W. GRIFFITH (Leeds) it was declared desirable that temporary accommodation should be provided in hospitals for certain cases of unsoundness of mind for purposes of observation.

The proceedings then concluded.

LYNN THOMAS AND SKYRME FUND.

THE following subscriptions have been received between March 28th and April 3rd by Mr. William Sheen, M.S. Lond., F.R.C.S. Eng. (2, St. Andrew's-crescent, Cardiff), honorary secretary to the fund.

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A TYPICAL CASE OF FOOT AND MOUTH DISEASE:
INTERESTING ILLUSTRATIONS.

WE are indebted to Mr. T. R. D. Carruthers, of St. Vincent-street, Edinburgh, for the interesting photographs which we reproduce below. The infected cow was attacked during the recent outbreak of this disease in Edinburgh, and the dark markings on the tongue and at the division of the hoof indicate well the site and appearance of the disease. The photographs were from specimens supplied by Professor J. R. U. Dewar, Principal of the Royal (Dick) Veterinary College, Edinburgh.

MEDICINE AND THE LAW.

Brown v. *Butler: Negligence in Supplying Impure Water.*

AN action, the hearing of which lasted for several days, ended recently in a verdict awarding damages to a widow, Mrs. Margaret Sophy Brown, in respect of the death of her husband, formerly farm bailiff at the Three Counties Asylum, Arlesey, Bedfordshire. The defendant was sued as the clerk to the committee of visitors of the asylum and the claim was based upon the alleged negligence of the defendant in supplying impure water for the consumption of the deceased with the result that he contracted enteric fever and died. There was a further allegation of negligence with regard to the medical attendance supplied to him under his contract of service, but this portion of the claim was abandoned after the evidence had shown that it could not be sustained. The evidence proved that the water supplied to the inmates of the asylum and to the cottage of the deceased, which was within the grounds belonging to the asylum, was derived from two wells and that it went through a softening process, being afterwards pumped up to water towers whence it reached the consumers. It was part of the widow's case that drains conveying sewage matter from the asylum to a sewage farm passed near one of the wells and were found to be in a very bad state after the death of her husband had taken place, and apparently Sir Thomas Stevenson (who was called for the defence) had found the bacillus coli present in the water, and Mr. G. F. Deacon, C.E. (also a witness for the defence), had attributed the enteric fever to the condition of the water-supply in a report made by him upon the subject. There was conflicting evidence as to the nature and extent of the complaints made by the Browns with regard to the water-supply and as to admissions by officials of the asylum before his death with regard to its defects, but the fact that the plaintiff had been alarmed at the appearance of the water was established, although it was not admitted on behalf of the defence that its turbid condition, to which she called attention, was caused by the presence in it of dangerous matter or was connected with her husband's illness. For the defence it was contended that the deceased had visited Yarmouth for a few days' holiday, returning on July 25th, 1906, and that his illness, of which he first complained on August 22nd and from which he died on Oct. 1st, was, or might have been, contracted there; that no trace of enteric fever contamination was traceable in the water, and that if the water had been contaminated a general outbreak in the asylum would have taken place inevitably and not merely a single case outside it. There was also evidence that cases of enteric fever had occurred in the neighbourhood, this being given presumably in order to show that, should the jury not ascribe the disease which affected the deceased to his visit to Yarmouth, there were still sources other than the water from which it could have been derived. Sir Thomas Stevenson, in his evidence, supported the view that a general outbreak should have taken place had the water been to blame, and explained that his report as to the undesirable condition of the water was due to the presence of the bacillus coli only. He also spoke of Yarmouth as a place in which the deceased would be likely to contract enteric fever. Mr. Deacon explained that a passage in a report made by him in which he said that "I think that there is no room to doubt that the outbreak was caused by the water" was based upon a mistaken belief that a general

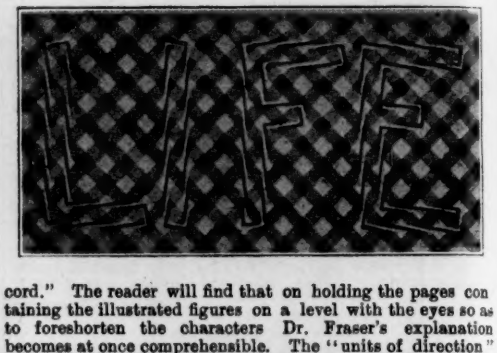
outbreak had taken place. The facts, apparently beyond dispute, that the water had not been in a condition of purity, and that the widow, who went into the witness-box to say so, had herself complained with regard to it, no doubt were accorded serious consideration by the jury who awarded her £650 damages, for which sum judgment was entered by Mr. Justice Grantham, a stay of execution being refused.

The Pistol Again.

The still frequent occurrence of accidents and intentional injuries inflicted by pistols, which evidently have been acquired by their possessors without any difficulty, points to the insufficiency of the late Act of Parliament regulating the sale of such weapons, so far as the protection of the public is concerned. A few weeks ago the suicide of a young lady in a train showed that she was in the habit of practising shooting with a revolver and in her case the existing statute would naturally have been of little avail and perhaps no other one likely to be passed would have been much more effectual. More recently, however, another woman has selected the same manner of committing suicide and in her case the enforcement of the Act might have given her time for reflection and might have deterred her from her purpose. It was not, however, enforced, with the result that Mr. A. H. Watson, a gun-maker in Bond-street, and his salesman were summoned before Mr. Denman recently at Marlborough-street police court. At the hearing it was shown that a lady known as Margaret Leighton or Alcott bought the pistol at 3 o'clock in the afternoon and on the same evening shot herself with it in a railway carriage at South Kensington. She had paid for the weapon £3 7*s.* 6*d.* and had obtained it without being obliged to produce a licence to carry firearms as a preliminary condition, by means of an ingenious tale that she intended it as a present for her daughter who was going to America. The salesman, apparently desiring to save his customer 10*s.*, allowed her to take away the weapon and as a result of the transaction each defendant had to pay a fine of £3 with 2*s.* costs. They had failed to insist upon such precautions as the law at present enjoins, but it can hardly be contended that these would necessarily have prevented the acquisition of a pistol by a person able and willing to pay £3 7*s.* 6*d.* for it. More stringent regulations might render the purchase or possession of a revolver illegal for any civilian unable to show that he required it for some lawful purpose, and the trade which would be diminished thereby can hardly be regarded as one of importance or as one useful to the community.

A NEW VISUAL ILLUSION.[1]

VISUAL illusions are always interesting and this pamphlet with its nine illustrative plates describes a new form of deception in a very lucid manner. Dr. Fraser states that: "In all the hitherto published visual illusions of direction, with the exception of the chequer-board or Münsterberg illusion, the illusory lines or bands are definitely continuous, uninterrupted in character, of black or of white, on a contrasting background. In the illusion of direction here described each illusory band consists of a series of visibly discrete similar parts, all inclined at the same small angle to the line of direction of the series to which they belong. Such visibly discrete similar parts may be conveniently termed 'units of direction.' Where the illusory band consists of alternating black and white 'units of direction,' it may be conveniently regarded as representing a cord consisting of two strands, black and white, twisted together." This arrangement he refers to in the subsequent descriptions of the illusions as the "twisted cord." A twisted cord laid upon a grey or coloured background of intermediate luminosity will, he says, apparently deviate from its actual line of direction at an inclination corresponding in trend (but at a smaller angular degree) to the inclination of the units of direction. This illusion is much increased in degree when the twisted cord is laid upon a chequer-work background of squares of white, black, and an intermediately luminous grey in such a way that it bisects diagonally each member of a series of black and white squares, its black and white units bisecting respectively white and black squares (their contrasts) at a small angle with the diagonal line of the square. Dr. Fraser's description continues as follows: "In such a figure each unit of direction is now, in effect, lengthened by the addition of a triangular area of the same luminosity at each of its ends. These triangular areas are derived or borrowed from the neighbouring squares belonging to the series on which the twisted cord lies, and they lie on opposite sides of the twisted



cord." The reader will find that on holding the pages containing the illustrated figures on a level with the eyes so as to foreshorten the characters Dr. Fraser's explanation becomes at once comprehensible. The "units of direction" then remind us of horse-nails but with a head on each end on opposite sides placed slantwise to form the outlines of the letters forming the word LIFE. If one of the examples is looked at in this manner the apparent sinuosity of outline disappears and the convergence and divergence of other examples are greatly modified. To see how great this modification is, it is only necessary to print on a piece of tissue paper the word Life in simple straight characters of the same size as the apparently crooked letters. When the rectangular word on the tissue paper is laid upon the "crooked" word as printed above the superimposition will be found almost exact. The paper well deserves study by those interested in the subject.

[1] A New Visual Illusion of Direction. By James Fraser, M.B., C.M. Aberd., Deputy Medical Superintendent, Central London Sick Asylum. Reprint from the Journal of Psychology, vol. ii., part 3, January, 1908.

THE FIRST INTERNATIONAL FIRST-AID AND LIFE-SAVING CONGRESS.

THE First International First-Aid and Life-Saving Congress which will be held at Frankfort-on-Main during Whitsun week of the present year, should prove to be of great interest, especially as the ever-increasing use of machinery and the altered conditions of the means of transit demand in the interests of the public the fullest consideration of the questions with which the Congress will deal.

As will be seen from the programme, many of the matters to be discussed have already received special attention in the United Kingdom, while the exhibition which will be held in connexion with the Congress will afford an opportunity for this country to occupy a fitting position in a movement of great importance.

The Congress will open on June 9th under the presidency of His Excellency Dr. Count von Posadowsky when there will be a reception of delegates in the Rathaus followed by a supper in the Ratskeller. On June 10th the Congress will meet in "Jügel Haus" and later in the day a banquet will be held in Frankfurter Hof. On June 11th the sectional meetings will be followed by a general meeting and a visit to the opera in the evening. On June 12th the proceedings of the Congress will be continued and a garden party will be held in the evening in the Palmengarten, and on June 13th, after the final meeting of the Congress, a visit will be made to the Höchst Farbwerke and supper will be given at the Kurhaus at Homburg. The provisional programme also announces that the Congress will be divided into ten sections dealing respectively with medical first-aid in cases of accident, instruction of non-professionals in first-aid, ambulance work in towns, ambulance work in the country and in industrial and small communal centres, ambulance work on land (railway, automobile, &c.), ambulance work at sea and on inland and coast waters, ambulance work in mines and similar places, ambulance

work by fire brigades, ambulance work on mountains, and ambulance work and sport.

The English committee for the United Kingdom, of which the Duke of Marlborough, K.G., is president, will consist of Sir John Furley, C.B., vice-chairman of St. John Ambulance Association (chairman); Lieutenant-Colonel H. J. Barnes, secretary of St. John Ambulance Association; Dr. W. Collingridge, medical officer of health of the City of London; Mr. Horace S. Folker, vice-president of the National Fire Brigades Union; Lieutenant-Colonel W. G. Macpherson, C.M.G., R.A.M.C.; Mr. G. H. Makins, C.B., surgeon to St. Thomas's Hospital; Commander St. Vincent Napean, M.V.O., R.N., chief inspector of lifeboats; Mr. E. O. Sachs, F.R.S.E., chairman of the British Fire Prevention Committee; Mr. S. Osborn, F.R.C.S. (honorary secretary); and Mr. A. M. Oppenheimer (assistant honorary secretary).

A traffic committee has been formed at Frankfort for the purpose of facilitating travelling arrangements and housing accommodation for members of the Congress.

The exhibition of appliances connected with first-aid and life-saving will be opened on June 6th and will be continued during the whole week of the Congress. Inquiries respecting this department of the Congress should be addressed to the exhibition committee, Bethmann Strasse 3, Frankfort o/M.

Particulars regarding the arrangements for the Congress will be supplied on application to Mr. S. Osborn, Masionnette, Datchet, Bucks, but full particulars have not yet arrived from Germany.

The following papers have been promised from Great Britain as contributions to the Congress: Suggestions to Improve First Aid on Railways, by Mr. James W. Croston; First Aid in the Fire Service, by Mr. Horace Folker; Suggested Rules for Recovering of Coal Mines after Explosions and Fires, by Mr. W. E. Garforth, President of the Mining Association of Great Britain; First Aid and Life-Saving in Coal Mines, by Mr. Albert M. Oppenheimer; and First Aid in the Streets of London, by Mr. S. Osborn, F.R.C.S. Eng.

SANITARY REFORM IN INDIA.

V.[1]—THE PLAGUE PROBLEM.

THE problem demanding solution that has pressed on the Indian Government with the greatest insistence since 1896 is undoubtedly that of plague. This virulent disease has since September of the above-mentioned year been ravaging our Eastern dependency. The difficulties connected with its eradication can be imagined when we consider the peculiar environment which it meets with in the East owing to the crowded insanitary bazaars in which the people live and the care and tact necessary not to offend their social and religious customs. To give some idea of the extent to which plague has flourished in India since its importation there the following facts may be cited. It was carried to the city of Bombay in 1896 from Hong-Kong (where the outbreak occurred in 1893–94), when it burst out as an epidemic in that place in September. From Bombay city it spread over the Presidency where it has continued ever since and has caused, as Professor W. J. R. Simpson tells us, 1,500,000 deaths up to the end of April, 1907. From the Bombay Presidency it has spread gradually to the other provinces of India and has occasioned up to May 31st, 1907, 5,402,245 deaths. The total population in India is about 300,000,000, so that this mortality means about 1 death in every 60 inhabitants. The mortality in the later years has been much greater than that of the earlier, as shown in the following table:—

Year.	Cases.	Year.	Cases.
1896	1704	1902	577,427
1897	56,056	1903	851,263
1898	117,953	1904	1,022,299
1899	134,788	1905	950,863
1900	93,150	1906	332,181
1901	273,559	1907	1,178,989

One of the most serious aspects of the case is the fact that the Punjab is now the seat of a portion of this large mortality, for from the Punjab are drawn some of our most valued recruits; hence it can be easily imagined how the Indian army must suffer. This province has, as a matter of fact, lost nearly 1,700,000 of its inhabitants and this number will at once be seen to be very high when we consider that the Punjab is in size less than one-twelfth of the total area of India, whilst it contains less than one-eleventh of the total population. The plague problem is, indeed, a most urgent and pressing one. The *Times of India* of June 1st, 1907, pointedly remarks:—

> To dismiss this epidemic with the statement that the people of the Punjab have been dying from it for some time past at the rate of 50,000 a week gives but a faint idea of the deserted villages, the crops rotting upon the ground over wide areas for lack of men to reap them, and the breaking up of homes and family life inseparable from such a calamity. ..... Natives of Rawal Pindi who have relations in the plague infected villages will not go to tend their sick: others have left the corpses or belongings of deceased relatives to the mercy of the village rather than risk plague. Firewood is not obtainable to burn the dead, so timber from the houses is being utilised, and many Hindoos are burying their dead.

Professor Simpson well says:—

> The silence of these unharvested fields, together with the figures of mortality, should bring to everyone's imagination a very clear realisation of the awful devastation of the Punjab. ..... The dying millions in India present a problem of the greatest urgency and danger. The plague, if left as it has been within recent years, to take its own course, bids fair in such circumstances to overrun not only India but also to be a danger to the world.

We will now more particularly enter into the subject of plague as it has affected the various provinces of India.

The Punjab.

In the Punjab during the year 1906 there were 120,745 cases of plague reported, of which 104,863 proved fatal. Of these 92,115 deaths occurred in British districts and 12,748 in the Native States. The epidemic, taken as a whole, may be characterised as a very mild one compared with those of the previous four years, the total mortality being much lower than in any year since the general infection over the greater part of the province. This is shown by the figures for the six years 1901–06:—

	Cases.	Deaths.
1901	36,739	20,998
1902	321,938	222,571
1903	341,267	210,697
1904	481,412	402,960
1905	451,791	390,233
1906	120,745	104,863

This low mortality, however, does not encourage the idea that a natural decline in the epidemic had begun, for at the end of 1906 the plague was as bad as ever at the time of year; and it is established by statistics that whilst in the latter half of 1905–06 there was but a small incidence, yet in the first part of 1906–07 the epidemic was as bad as any that had as yet been experienced, if not worse. The total loss that the province has experienced since its first importation in 1897 up to Dec. 31st, 1906, amounts to 1,355,278 lives. As regards the several districts of the Punjab, it is worthy of note that certain of these were escaping the pestilence, although they had suffered in previous years. These districts were those of Hissar, Gurgaon, Shahpur, Jhelum, Jhung, and Lyallpur. With regard to its seasonal prevalence, there seems to be a difference in the seasonal variation in separate parts of the province, inasmuch as the incidence of plague tends to diminish during extreme heat and cold, and especially during the former, so that towards the south with its earlier and longer hot weather the maximum is reached sooner than in the north, the month of maximum intensity being April, although for the whole province it was May; in the south also the freedom during the summer is more distinct, more prolonged, and recrudescence occurs later, opposite conditions to those occurring in the north.

Respecting the type of the disease, by far the largest number of cases are of the bubonic variety, while the fewest are of the septicæmic type. It is satisfactory to note that the people are becoming less suspicious of proffered assistance, although the spirit of self-help is still wanting. The virulence of the disease does not appear to be diminished. With regard to the general plague policy that has been pursued, stress has been laid on the primary importance of preventing, aborting, or delaying recrudescence, inasmuch as it is recognised that the annual seasonal epidemics depend on recrudescence in a large number of places which have been apparently free for some time; from these the disease spreads over the surrounding country. Second to this in

[1] Nos. I., II., III., and IV. were published in THE LANCET of Feb. 22nd (p. 582) and 29th (p. 661), and March 14th (p. 806) and 21st (p. 883), 1908, respectively.

importance are the measures for preventing diffusion from actually infected to healthy localities, and last of all come the means for combating each local outbreak. It is evident that considerable difficulties will be experienced in attaining the primary object due to the impossibility of discovering definitely every endemic centre, so that all potential ones must be attacked, involving a large number of localities; again, they must be attacked before the infection becomes active. Thus a very large staff is necessary, and as the medical staff can never be increased sufficiently to meet requirements, the necessary measures must be undertaken by the people themselves. Amongst the preventive measures employed we see that rail and road inspection was carried out, whilst there were surveillance over arrivals, isolation, and segregation. The right of refusal to allow persons from infected areas to enter healthy localities was hardly ever enforced owing to the social customs and binding obligations of hospitality of the people. In the face of an epidemic evacuation is considered to be the best and most effective measure but it is rarely carried out by the people effectively; whilst the Hindus will practise it the Mahomedans are taught that it is against their religion and consequently seldom adopt it. Disinfection is rarely effective from the fact that information is but seldom received sufficiently early to allow of its successful application. Insecticides are being tried but the chief reliance is placed on heat. Without doubt inoculation is one of the best and most effective methods of prevention but the people are loth to undergo the operation and its slight inconvenience unless danger is actually present. Owing to the comparative mildness of the epidemic of 1905-06 the operation was less done than in the previous year; 27,924 inoculations in all were performed.

The destruction of rats was held to be very important. The general opinion was pronounced in its favour and recrudescences were held to have been prevented or delayed and also the epidemic to have been mitigated, even when the measure was applied after infection. Captain G. I. Davys, I.M.S., brings forward some remarkable evidence in its favour, for where it was thoroughly carried out no cases of plague occurred; where nothing was attempted severe epidemics followed recrudescence. A good example of this is afforded by the Amritsar district, in the very heart of the infected area, where no recrudescence occurred, all the cases being due to importation. The difficulties in the successful application of this method consist in the innate prejudices of the people, as certain sections object to the taking of life, or in the ignorance and suspicion engendered by any new measure. Thus, with regard to the former, the whole town of Mukerias was baited for these animals excepting two clumps of houses inhabited by Jains; in these only did recrudescence start. To be effective, however, the people themselves must be the active agents, and to insure this the active coöperation of their natural leaders is being enlisted. With regard to the actual medical treatment, everything is done to give assistance to all who wish it but not very much can be done in the way of systematic treatment, as the medical staff are constantly on the move.

North-West Frontier Province.

In the North-West Frontier Province 44 cases of plague occurred in 1906—namely, 41 in the Hazara district, 2 in Peshawar, and 1 in Dera Ismail Khan. Of these 40 proved fatal in Hazara and 1 in Peshawar. A man suffering from plague went from Rawal Pindi and imported the disease into the Hazara district. He died at the village of Ghazi and his relatives, occupying the same house, contracted the disease which spread to three neighbouring villages.

United Provinces of Oudh and Agra.

The returns from the United Provinces of Oudh and Agra show a diminution of mortality for 1906, there being 69,660 deaths recorded from plague during the year, contrasted with 383,862 in 1905, the death-rate being 1·46 and 8·05 respectively. The highest mortality was in March and the lowest in July. The total number of persons reported to have been inoculated with anti-plague vaccine was only 1846, against 6411 in 1905. No persons are reported to have died from plague after inoculation.

Eastern Bengal and Assam.

Coming now to the province of Eastern Bengal and Assam there were several outbreaks of the disease in 1906. For instance, in the month of March there was an outbreak of a pneumonic character in the Pabna district, said to have been imported from Calcutta. A patient died on the voyage up the Brahmaputra; his body was carried home by two friends who themselves contracted the disease and became the centre of infection. Again, in June there were two other outbreaks, both pneumonic and both imported from Calcutta. In these three outbreaks there were 82 cases with 74 deaths. From an inquiry into the history of plague in this province since 1898 there have been seven distinct epidemics, the original cases of which were all imported from Calcutta or its neighbourhood. Nearly all were pneumonic in character with a history of direct infection of the healthy from the sick in every case; there was never any history of distribution by rats or any connexion with grain. There was, however, one exception—namely, in the Dibrugarh outbreak which was bubonic in character and appears to have been connected with granaries and rats and not to have been imported by human agency.

Bengal.

Respecting the province of Bengal, the mortality, which had been steadily increasing of late years, showed a very satisfactory reduction, there being 59,619 deaths in 1906 as against 126,084 and 75,433 during the two preceding years. Thus the number of victims has dropped to less than half of that of 1905. The diseases affected the females more than the males and the rural areas more than the towns. With respect to its seasonal prevalence, there was great intensity of the disease during the first few months of the year, due to the coolness and excessive rains. With the onset of the hot weather there was a sudden drop. With regard to the measures employed for combating the disease, antiplague inoculations to the number of 1777 were performed as against 1544 in the preceding year. No cases of, or deaths from, plague occurred amongst the inoculated. Chemical disinfection was carried out in special cases where it was asked for, and also in several municipal areas where it could be supervised. Disinfection by heat and evacuation of infected houses have become very popular and are generally resorted to by the rural people. In Saran we are glad to see that general instructions on plague and its prevention have been drawn up and distributed broadcast over the district, the method of disinfection being minutely described and evacuation being recommended. At Bhagalpur the disinfection was carried out by the spraying of the insides of the infected houses with kerosene oil by means of the "Success Knapsack Sprayer," which was followed by signal success. Lastly, rat-killing is gradually becoming popular. In Jagdespur, where the work was done systematically, the town enjoyed a complete immunity from the disease, whilst recrudescences occurred with considerable severity in adjoining thanas and all the other towns in the district except Sasaram.

Central Provinces and Berar.

In the Notes on the Annual Statements of the Government Charitable Dispensaries in the Central Provinces and Berar for 1906 we find an important note from the manager of the Empress Mills, Nagpur, on the results of the inoculation of the employees during the outbreak of plague at Nagpur in 1905-06 by Mr. Bezongi Dadabhoy, the manager. This gentleman remarks that during the plague season 1119 persons were inoculated, of whom five were reported dead, but that two at least of these cases must have had the germs of plague before they were inoculated. Amongst the uninoculated, numbering 2665, there were 179 deaths reported. He had invariably found inoculation with Haffkine's vaccine to have a very beneficial effect in reducing the severity of, and mortality from, plague, the only mishap being a few cases of abscesses and consequent illness; the last series of inoculations, however, showed a vast improvement and the results were remarkably good.

CENTRAL MIDWIVES BOARD.—Special meetings of the Central Midwives Board were held on March 26th and 27th at Caxton House, Westminster, Dr. F. H. Champneys being in the chair. The Board considered various charges—such as uncleanliness, drunkenness, and omission to send for medical assistance in the statutory manner—against midwives, the result being that the names of 18 women were to be struck off the roll. Seven midwives were censured and two were cautioned after charges alleged against them had been considered. The application of an ex-midwife for the restoration of her name to the roll (removed by the Board Dec. 12th, 1907) was refused.

Public Health and Poor Law.

LOCAL GOVERNMENT BOARD.

REPORTS OF INSPECTORS OF THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

On Accommodation provided for Strawberry-Pickers in the Dartford Rural District, by Dr. R. A. FARRAR.[1]—A vigorous agitation was carried on a year or two ago regarding the degrading and insanitary conditions to which fruit-pickers from the east of London and elsewhere were submitted during their employment in the strawberry season. Attention was called to this matter in an article in THE LANCET of July 16th, 1904 (p. 167). Dr. Farrar, who had already contributed an interesting report to the Local Government Board on the whole question of accommodation of hop-pickers and fruit-pickers, made a special inquiry last year into the conditions obtaining in the extensive rural district of Dartford, where large quantities of strawberries are grown for the London market and where many complaints had arisen in the past. He found that the considerations which had been brought, by means of his former report, to the notice of Kentish fruit growers, coupled with the agitation referred to, had produced a remarkable improvement. Thus the huts as a rule were found weather-tight; in many cases concrete flooring had been laid down; the supply of straw was ample and clean and the farmers had made increased closet provision. A covered cooking shed was generally provided, although in some instances this very desirable arrangement was still wanting. Several farmers had adopted the suggestion of the medical officer of health and had appointed bailiffs or foremen to supervise the camps. Where this was done the camping grounds were generally kept fairly clean and scavenging was attended to. In almost every camp water is laid on by standpipes from the mains of the Metropolitan Water Board, and the provision of washhouses or washing troughs has increased. In the past it has so often been urged that in the case of fruit-pickers and hop-pickers the conditions of labour and the character of the population preclude any successful attempt to improve the conditions of living and housing that Dr. Farrar's report comes as welcome evidence in the contrary sense.

On the Sanitary Circumstances and Administration of the Sanitary Districts in the Staines Registration District,[2] by Dr. E. P. MANBY.—It is surprising to find that no isolation hospital provision is available in this registration district which has a total population estimated to be over 39,000 and comprises such important residential neighbourhoods as Staines, Sunbury, and Feltham. Such provision has been repeatedly urged by the medical officers of health of the districts concerned and is particularly needed in view of the rapid increase of population which is taking place here as elsewhere on the outskirts of London. Dr. Manby refers to various instances in which isolation of the earliest cases in particular localities or houses, if it had been available, would probably have stopped the spread of diphtheria or scarlet fever. He recommends the formation of a joint hospital district by the Middlesex county council in the absence of mutual agreement between the district councils themselves. Many other serious shortcomings of sanitary administration are brought to light by this report. Special attention is drawn to the bad or unsuitable condition of private slaughter-houses, to the need for closer inspection of the structure of new and old buildings, and to the anomalous position in which the Staines rural council has placed its medical officer of health in regard to the assistance given to him by the local inspector of nuisances.

On the Sanitary Circumstances and Administration of Certain Small Urban Districts in the West Riding,[3] by Dr. R. A. FARRAR.—This report relates to certain typical small urban districts which abound in the neighbourhood of Leeds, Bradford, Halifax, Huddersfield, Barnsley, and Wakefield. Though technically "urban" they are in many cases mere agricultural villages with populations of 500 or even less. Most of them acquired their urban status in the early "sixties" after the passing of the Local Government Act of 1858. The object in attaining such status appears to have been merely to evade the county highway rates. The existence of "urban districts" of this kind creates many difficulties in sanitary administration. No one district, for example, can afford to make satisfactory arrangements for public water-supplies or sewerage, or for the sewerage of the mills which are numerous in this part of Yorkshire. And naturally the system does not conduce to the appointment of efficient or experienced sanitary officers. The account given in this report contains many illustrations of the numerous difficulties which have arisen in the particular areas selected for inquiry, and its most satisfactory feature is the formulation of an important scheme for dealing with no fewer than 28 sanitary districts and replacing them by five new districts corresponding with natural drainage areas, the Colne, Holme, Thunder Bridge Dyke, Dearne, and Don valleys respectively. It is to be hoped that the Local Government Board and the West Riding county council will lose no time in putting this scheme into execution.

On the Sanitary Circumstances and Administration of the Wimborne and Cranborne Rural District, by Dr. W. W. E. FLETCHER.[4]—Dr. Fletcher describes a form of closet met with in this district which consists of a combination under a single roof of storehouse, privy, and piggery. The privy cesspit is separated from the pig run only by a moveable door which does not always prevent escape of excremental matter into the pig's run, on the one hand, or access by the pig to the cesspit, on the other. The conditions of pig keeping and feeding are often in many other respects unwholesome. An instance is given in which meat from a diseased bullock was given to pigs and it is probable that this is a not uncommon cause of tuberculosis in these animals. The district reported on has an important dairying industry. A common defect in the cowsheds is that the channels are too narrow and shallow and consequently soon get blocked with dung, with the result that the hind quarters and udders of the cows get fouled and dirt and dung are apt to get into the milk. Many new houses have been erected during recent years without satisfactory water-supply and the local authority has not insisted upon water certificates in regard to them. Although the district contains over 13,000 persons no attempt is made to examine plans of new buildings or to supervise dwellings in course of erection. Registration of cowsheds commenced only a year ago and no regulations have even now been made under the Dairies and Cowsheds Order.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Woking Urban District.—The district council has recently had the question of infantile mortality under its consideration but the recommendation of the sub-committee as to the appointment of a trained nurse as lady health visitor has not yet been acted upon. A case of anthrax occurred in this district during 1907 in somewhat disquieting circumstances. A bullock found one morning to be seriously ill was promptly slaughtered and a butcher was sent for to cut up and to dress the carcass. This butcher acquired the carcass and probably sold the whole of it within the district for human food, the hide, hoofs, entrails, &c., being sent to London. It was only after an interval of several days that the above facts were brought to light by the occurrence of a case of external anthrax in a man who had helped to dress the carcass. This man after operation subsequently recovered but further inquiries led to the discovery that the farm foreman, who also helped to dress the bullock, had died recently from "septicæmia" or what was more probable from internal anthrax. Dr. R. W. C. Pierce, the medical officer of health, has done well to bring these facts to light as they illustrate the dangers which the public incur in the absence of public slaughter-houses. Some machinery is clearly desirable in rural districts whereby animals before slaughter may be inspected by a responsible official.

The Borough of Chelmsford.—In certain particulars the sanitary condition of this borough leaves something to be desired. Although the sewerage and the drainage are, we are told, in a very satisfactory condition, the ventilation of the sewers is apparently a matter of urgency, and notwithstanding the above statement as to the satisfactory condition of the sewerage the medical officer of health is of opinion

[1] London: Wyman and Sons, Fetter-lane; Edinburgh: Oliver and Boyd; Dublin: E. Ponsonby. No. 293. Price 5d.
[2] Ibid., No. 292. Price 5d.
[3] Ibid., No. 297. Price 6d.
[4] Ibid., No. 300. Price 3d.

that "the borough with its sewers all practically unventilated is in a deplorable, not to say dangerous, condition." The town council is, it appears, ever ready to maintain house drainage in an efficient state but "no attempt is made by the sanitary committee to put their own system of drainage in order." This is very wholesome and candid criticism on the part of Mr. H. W. Newton, the medical officer of health, and we trust that it may have the desired effect. At any rate, the responsible officer cannot be accused of neglect to draw attention to the facts. As regards the disposal of house refuse, the medical officer of health can "report nothing favourable," and it seems that the authority is a nuisance creating as well as a nuisance abating body. A refuse destructor is, it is thought, the best remedy. The water-supply of the borough, 17·7 gallons per head, is, the medical officer of health thinks, inadequate, more especially as two of the sources of supply show definite signs of steadily decreasing in amount. The borough should, in his view, be furnished with an adequate and a constant supply. At present the greater portion of the town is on an intermittent supply.

Buckingham Rural District.—Dr. P. L. Benson in deploring the high infantile mortality which still obtains in the country generally thinks that if anything approaching the same mortality (about 15 per cent. of the children born) obtained amongst animals on a farm the farmer would have to relinquish breeding operations. Dr. Benson states that the mortality among chickens is 2 per cent.; pigs and cows, 4 per cent.; and horses, 8 per cent.; but it is not quite clear from the context whether these rates apply to the whole of the first year of life or only to the first few weeks. Dr. Benson is evidently an advocate of milk depôts and in connexion with this subject he refers to some experiments recently carried out under the direction of Mr. Nathan Strauss in Heidelberg, in which five guinea-pigs were inoculated with tuberculous milk in a raw state and five others with such milk after it had been pasteurised. The first five animals shortly developed tuberculosis but the latter remained free from the disease. The death-rate from pulmonary tuberculosis in this rural district for 1907 was 0·65 per 1000, as against a *nil* return for 1906.

St. Anne's-on-the-Sea Urban District.—Dr. Frederick Booth proposes to deal with phthisical patients in a somewhat drastic fashion. He would have them treated in the same manner as patients suffering from acutely infectious diseases like typhus fever or small-pox and isolated for the safety of the public. We wonder what the phthisical breadwinners, with, perhaps, very many years of useful work before them, would say to a proposal on the part of the medical officer of health to separate them from their families for the remainder of their lives or until they were cured. Provision for the families would presumably have to be made out of the local rates. We should have thought that in the vast majority of cases the provision of a separate bedroom or a course of instruction in a sanatorium or isolation hospital or by means of visits from a trained official would suffice. The St. Anne's report makes apparently no differentiation between "open" and "closed" cases of pulmonary tuberculosis. We are afraid that if Dr. Booth endeavoured to enforce his views he would find patients very unwilling to have their malady recognised and hence the opportunities of securing early cases for sanatorium treatment would be few.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8574 births and 5222 deaths were registered during the week ending April 4th. The mean annual rate of mortality in these towns, which had been equal to 16·9 and 17·4 per 1000 in the two preceding weeks, declined again to 16·8 in the week under notice. During the 13 weeks of last quarter the annual death-rate in these towns averaged 18·0 per 1000; the mean rate in London during the same period did not exceed 17·6. The lowest annual death-rates in the 76 towns last week were 9·1 in Leyton, 9·4 in Grimsby, 10·3 in York, and 11·1 in Wigan and in Blackburn; the rates in the other towns ranged upwards to 24·7 in Ipswich, 25·5 in Stockton, 26·1 in Burton-on-Trent, and 26·3 in Merthyr Tydfil. The rate of mortality in London last week did not exceed 16·6 per 1000. The 5222 deaths in the 76 towns last week showed a decline of 182 from the number returned in the previous week, and included 445 which were referred to the principal epidemic diseases, against 410 and 486 in the two preceding weeks; of these, 204 resulted from whooping-cough, 110 from measles, 48 from diphtheria, 41 from diarrhœa, 24 from scarlet fever, and 18 from "fever" (principally enteric), but not one from small-pox. The deaths from these epidemic diseases in the 76 towns were equal to an annual rate of 1·4 per 1000, against 1·3 and 1·6 in the two preceding weeks; the rate from the same diseases in London was also equal to 1·4. No death from any of these epidemic diseases was registered last week in Blackburn, Huddersfield, Wigan, Grimsby, or in three other smaller towns; the annual death-rates from these diseases ranged upwards, however, to 3·8 in Hanley, 3·9 in Birkenhead, 4·1 in Newport (Mon.), and 5·9 in Stockton-on-Tees. The fatal cases of whooping-cough in the 76 towns, which had been 134, 152, and 203 in the three preceding weeks, further rose to 204 in the week under notice; the highest death-rates from this disease last week in these towns were 2·2 in Birkenhead, 2·3 in Handsworth, 3·0 in Sunderland, and 4·1 in Newport (Mon.). The 110 deaths from measles showed, however, a decrease of 31 from the number in the previous week; they caused death-rates, however, equal to 1·7 in Croydon, 2·3 in Hanley, 2·5 in Burnley, and 4·9 in Stockton-on-Tees. The deaths referred to diphtheria, which had ranged from 66 to 52 in the four previous weeks, further declined last week to 48, but caused a death-rate equal to 1·9 in Tynemouth. The 41 deaths attributed to diarrhœa exceeded the numbers in recent weeks; and the four fatal cases in Warrington were equal to an annual rate of 2·9. The 24 deaths from scarlet fever showed a decline from the numbers in recent weeks, but included four in Liverpool, three in Birmingham, and two in Leicester. 18 deaths were referred to "fever," against 16 in each of the two preceding weeks, and included three in London, and two both in Preston and in Bradford. The number of scarlet fever patients under treatment in the Metropolitan Asylums and London Fever Hospitals, which had steadily declined in the 17 preceding weeks from 5531 to 3229, had further fallen to 3121 on April 4th; 315 new cases were admitted to these hospitals during the week under notice, against 378 and 355 in the two preceding weeks. One case of small-pox was under treatment in the Metropolitan Asylums Hospitals during the week. The deaths in London referred to pneumonia and other diseases of the respiratory organs, which had been 317, 320, and 349 in the three previous weeks, further rose to 351 in the week under notice, and exceeded by 19 the corrected average number in the corresponding week of the five years 1903–07. The deaths directly referred to influenza in London were 64 last week and were seven below the number in the previous week. The causes of 45, or 0·9 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were again duly certified last week in Leeds, Bristol, West Ham, Bradford, Hull, and also in 46 other smaller towns; six uncertified causes of deaths were, however, registered in Birmingham, seven in Liverpool, and four in Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been equal to 18·5 and 19·4 per 1000 in the two preceding weeks, further rose to 19·7 the week ending April 4th, and exceeded by 2·9 the mean rate during the same week in the 76 large English towns. Among the eight Scotch towns the death-rates last week ranged from 13·9 and 17·1 in Paisley and Edinburgh, to 21·0 in Dundee and 21·8 in Glasgow. The 694 deaths in these eight towns showed a further increase of 11 upon the numbers returned in the two preceding weeks, and included 97 which were referred to the principal epidemic diseases, against 84 and 114 in the two previous weeks; of these, 35 resulted from measles, 24 from whooping-cough, 20 from diarrhœa, seven from "fever," six from scarlet fever, and five from diphtheria, but not one from small-pox. These 97 deaths were equal to an annual rate of 2·8 per 1000, against just double the mean rate last week from the same diseases in the 76 English towns. The fatal cases of measles in the eight Scotch towns, which had been 37 and

58 in the two preceding weeks, declined again last week to 35, of which 23 occurred in Glasgow, six in Aberdeen, three in Greenock, and two in Paisley. The 24 deaths from whooping-cough showed an increase of two upon the number in the previous week, and included 11 in Glasgow, four in Edinburgh, four in Aberdeen, and two both in Dundee and in Paisley. Of the 20 deaths attributed to diarrhœa, 11 were returned in Glasgow, six in Dundee, and two in Edinburgh. The seven deaths referred to "fever" corresponded with the number in the previous week, all being certified as due to cerebro-spinal meningitis; five occurred in Glasgow and one each in Leith and Greenock. Three of the five fatal cases of diphtheria were returned in Glasgow and two of the six deaths from scarlet fever in Dundee. The deaths referred to diseases of the respiratory organs in the eight towns, which had been 158 and 133 in the two preceding weeks, further declined to 114 in the week under notice, but exceeded by five the number returned in the corresponding week of last year. The causes of 31, or 4·5 per cent., of the deaths in these eight towns last week were not certified or not stated; in the 76 English towns the proportion of uncertified causes of death in the same week did not exceed 0·9 per cent.

HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been equal to 23·9 and 27·4 per 1000 in the two preceding weeks, declined again to 26·0 in the week ending April 4th. During the 13 weeks of last quarter the death-rate in the city averaged 25·5 per 1000, the mean rates during the same period being only 17·6 in London and 18·3 in Edinburgh. The 197 deaths of Dublin residents registered in the week under notice showed a decline of ten from the number in the previous week, and included seven which were referred to the principal epidemic diseases, an increase of three upon the low number returned in each of the three preceding weeks; these seven deaths included three from diarrhœa and one each from measles, scarlet fever, whooping-cough, and "fever," but not one either from diphtheria or small-pox. These seven deaths from epidemic diseases were equal to an annual rate of 0·9 per 1000, the death-rate last week from these principal epidemic diseases being equal to 1·4 in London and 1·2 in Edinburgh. The three deaths attributed to diarrhœa in Dublin last week exceeded the numbers in any recent week. The 197 deaths from all causes in the city last week included 25 of infants under one year of age and 69 of persons aged upwards of 60 years; the deaths of infants were fewer than in any recent week. Four inquest cases and one death from violence were registered, and 81, or 41·2 per cent., of the deaths occurred in public institutions. The causes of four, or 2·0 per cent., of the deaths registered in the city during the week under notice were not certified; in London all but one of the 1527 causes of death last week were duly certified, while in Edinburgh the proportion of uncertified deaths was equal to 3·5 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

IN accordance with the provisions of Her late Majesty's Order in Council of April 1st, 1881, Fleet Surgeon Alexander Livingston Christie has been placed on the Retired List, at his own request, with permission to assume the rank of Deputy Inspector-General of Hospitals and Fleets (dated March 27th, 1908).

The following appointments are notified:—Fleet Surgeon: F. J. Burns to the *President*, additional, for three months' course at Meath Hospital, Dublin. Staff-Surgeons: A. X. Lavertine, to the *Suffolk*, on recommissioning; and H. C. Whiteside, to the *Vivid*, additional, for the *Theseus*. Surgeons: R. Thompson, to the *Suffolk*, on recommissioning; and A. B. Marsh, to the *Vivid*. Civil Practitioners: L. B. Mudge to be Surgeon and Agent at Gwythian Detachment; J. R. Dee to be Surgeon and Agent at Walton-on-Naze and Walton Creek.

ARMY MEDICAL SERVICE.

Lieutenant-Colonel Alan E. Tate, R.A.M.C., to be a Deputy-Assistant-Director-General at Headquarters, vice Lieutenant-Colonel M. W. Russell, R.A.M.C. (dated April 1st, 1908).

Colonel James McNamara is placed on retired pay (dated March 29th, 1908).

Lieutenant-Colonel Michael W. Kerin, from the Royal Army Medical Corps, to be Colonel, vice J. McNamara (dated March 29th, 1908).

HONOURABLE ARTILLERY COMPANY OF LONDON.

Surgeon-Lieutenant John F. Taylor to be Surgeon-Captain (dated March 10th, 1908).

IMPERIAL YEOMANRY.

Glamorganshire: Surgeon-Lieutenant Colin C. McCall resigns his commission (dated March 1st, 1908).

VOLUNTEER CORPS.

Rifle: 5th (Irish) Volunteer Battalion, The King's (Liverpool Regiment): Surgeon-Lieutenant John M. Ahern to be Surgeon-Captain (dated March 7th, 1908). 1st Volunteer Battalion, The Prince of Wales's Own (West Yorkshire Regiment): Surgeon-Captain Alexander R. Stoddart to be Surgeon-Major (dated Jan. 31st, 1908). 2nd (Berwickshire) Volunteer Battalion, The King's Own Scottish Borderers: Surgeon-Lieutenant David Skinner is retired, under the conditions of Paragraph 103 of the Volunteer Regulations (dated March 21st, 1908). Galloway Volunteer Rifle Corps: Surgeon-Captain Robert T. Bell Lorraine resigns his commission, with permission to retain his rank and to wear the prescribed uniform (dated March 6th, 1908). 1st Cinque Ports Volunteer Rifle Corps: Peter Millar Waugh to be Surgeon-Lieutenant (dated March 9th, 1908). 1st London Volunteer Rifle Corps: Surgeon-Captain Arthur D. Ducat to be Surgeon-Major (dated March 31st, 1908). 4th (Donside Highland) Volunteer Battalion, The Gordon Highlanders: Surgeon-Major Alexander Nicol to be Surgeon-Lieutenant-Colonel (dated March 10th, 1908). 1st Dumbartonshire Volunteer Rifle Corps: Surgeon-Major John R. F. Cullen to be Surgeon-Lieutenant-Colonel (dated March 4th, 1908). Surgeon-Lieutenant-Colonel John R. F. Cullen resigns his commission, with permission to retain his rank and to wear the prescribed uniform (dated March 5th, 1908).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS.)

Welsh Bearer Company: Major Charles Downing (Brigade-Surgeon-Lieutenant-Colonel, Senior Medical Officer, Welsh Volunteer Infantry Brigade), to be Lieutenant-Colonel, remaining supernumerary (dated March 2nd, 1908).

MEDICAL UNITS IN THE SOUTHERN COMMAND.

The Army Council has decided to locate additional units of the Territorial Force in the Southern Command—viz., one general hospital and one field ambulance at Portsmouth and one cavalry field ambulance at Devizes. Medical training is to be carried out at the R.A.M.C. camp on Salisbury Plain during August.

THE PRIZE DISTRIBUTION AT HASLAR.

At the Royal Hospital, Haslar, on April 6th, Sir Dyce Duckworth, who was accompanied by Sir Herbert Ellis, K.C.B., the Director-General of the Royal Navy Medical Service, presented the prizes and delivered an address to the recently joined surgeons of the Royal Navy who had passed through the course of instruction. The prizes were awarded as follows: The gold medal for hygiene to Surgeon G. B. Scott (St. Bartholomew's Hospital); the silver medal and books for practical analysis, &c., to Surgeon J. McCutcheon (University of Edinburgh); the microscope for tropical medicine, &c., to Surgeon G. Carlisle (Guy's Hospital).

The following is the list of Surgeons who passed out, together with the combined marks obtained at both the London and Haslar examinations.

	Marks.		Marks.
Surgeon Carlisle	4468	Surgeon Babington ...	3537
Surgeon McCutcheon ...	4127	Surgeon Wright	3373
Surgeon Scott	3974	Surgeon Carson	3188
Surgeon Holl	3793	Surgeon Hamilton... ...	2907
Surgeon Petch	3598		

Sir Dyce Duckworth in his address recalled the fact that he had at one time been a member of the service though he had never served afloat, but had a valuable experience under "one of the ablest and kindest inspector-generals of his day, the late Dr. Stewart, well known for his splendid service in combating yellow fever in H.M.S. *Eclair*." He congratulated them all on having entered the King's first and finest service. Referring to the duties which his hearers would soon have to take up, he said that first and foremost they would have to bear in mind that they were medical officers and would have to give proof of their skill and qualities as

members of the medical profession. In this capacity they had strenuously to maintain the highest standard of professional ethics and dignity. Their position as ward-room officers would bring them in daily contact with the best and ablest colleagues in the ship. In this relation they had to maintain a cheerful, but not too hilarious, comradeship with perfect good temper, a measure of dignity (always void of priggishness), and the grace of self-effacement. In short, each would have to be *bonus comes*, which in plain English meant a good fellow. The medical profession was everywhere and always one of self-sacrifice and self-denial. It was therefore a power for refining character. Strictly professional knowledge and experience need not rust, or fall much behind, as was commonly imagined, but it would assuredly do so if the young officer was indolent or casual, or shirked his duties. "Always do the best work you can in the best way you can," continued Sir Dyce Duckworth, who urged his hearers to work diligently at one or two modern languages, and concluded his inspiring address by referring to "one who was once a naval surgeon but rose afterwards to the highest place in the sister service, who was asked at the end of his long and distinguished career, in my presence, if he still believed in *anything*. 'Yes,' he said, '*I do; I still believe in a gentleman.*' I agree with that grand old man," said Sir Dyce Duckworth; "his portrait adorns a neighbouring room here, Surgeon-General Sir Joseph Fayrer, Bart., K.C.S.I." If they would maintain that ideal throughout their service they would all reach higher prizes in their profession than any that he had presented that day.

Correspondence.

"Audi alteram partem."

THE STATISTICAL SIDE OF THE OPSONIC QUESTION.

To the Editor of THE LANCET.

SIR,—The statistical portion of the memoir by Dr. Reyn and Dr. Kjer-Petersen which appears in your issue of March 28th raises a question of such importance that I should like to refer briefly to some considerations suggested by it.

Although the statistical side of the opsonic question has been discussed at a meeting of a London society, Dr. Reyn and Dr. Kjer-Petersen are, so far as I know, the first workers to draw public attention to the fact that the significance of opsonic determinations can only be estimated with the help of statistical analysis. They are to be congratulated on their clear enunciation of this important truth, but it is permissible to doubt whether their method of analysis is capable of solving the very complex problems underlying the experimental data. From the use made by Dr. Reyn and Dr. Kjer-Petersen of the "mean error" and the standard deviation as a criterion of the distribution of deviations I infer that what they mean by the "law of error" is the well-known Gauss-Laplace distribution. Now it is by no means clear that calculations based upon this law are valid for phagocytic counts. Although, for reasons which need not be discussed here, a belief has long been entertained that this Gauss-Laplace law was the final word in the theory of random distributions, statisticians are now pretty well agreed—thanks to the work of Fechner, Bruns, and above all, Karl Pearson—that many distributions cannot adequately be described by means of the "normal curve" and that it is necessary to employ the more general form of which the "normal curve" is a particular case. The application of this process to statistical practice has been rendered possible by the researches of Karl Pearson.

At the London Hospital my colleague Dr. Douglas White and myself have been for some time engaged on this problem and we have found that the distributions of phagocytic counts (for numbers varying from 600 to 1100 cells) are not even approximately "normal," the distribution of the numbers on either side of the mean being highly "skew," the mean and mode not coinciding. It therefore follows that the method of the mean error or any kindred process based on the assumption of a "normal" distribution is not applicable since positive and negative deviations of the same magnitude do not occur with equal frequency. There is, indeed, reason to believe that with an increase in the mean number of bacilli per cell the asymmetry is diminished, but we have no satisfactory evidence that the process used by Dr. Reyn and Dr. Kjer-Peterson is applicable to our data. I think, therefore, that in the absence of more evidence the reasoning of Dr. Reyn and Dr. Kjer-Petersen will not enable one to assign definite limits to the normal range of variation.

There are other points of great interest in this paper to which I should have liked to allude, but this must be postponed. I only venture to trouble you in the matter because a complete statistical analysis of the material at our disposal cannot be ready for a considerable time and I desire to emphasise the urgent necessity of caution in drawing conclusions with respect to this subject. In the mass of papers, both eulogistic and vituperative, which deal with the opsonic method little is to be found having much statistical value. Dr. Reyn and Dr. Kjer-Petersen appear to be the first clinicians who have seriously attempted to grapple with the difficulties.

I am, Sir, yours faithfully,

M. GREENWOOD, jun.,
Director of the London Hospital Statistical Department and Senior Demonstrator of Physiology in the Medical College.

London Hospital, E., April 6th, 1908.

To the Editor of THE LANCET.

SIR,—The article of Dr. Reyn and Dr. Kjer-Petersen on the Opsonins of Tubercle which has just appeared in THE LANCET must be of the greatest interest to workers in this particular field. It is generally recognised that the opsonin technique in the case of the tubercle bacillus presents greater difficulties and affords more sources of error than that which is employed with many other bacteria. This may be partly due to the impossibility of preparing a satisfactory bacterial emulsion without, to some extent, damaging the bacilli in the agate mortar, and partly to the injury that is often done to the contour of the leucocytes by the staining method necessary. Dr. Reyn compares the average count in the case of six normal sera treated separately with a count of the same sera "pooled," and the results are certainly startling. But these observations would have been more instructive had he also published several opsonic estimations of the *same* serum arrived at by different workers and the same counter, and by the same worker and different counters.

The tubercle bacillus is nearly always about $0 \cdot 2$ micron thick but its length varies from $1 \cdot 5\,\mu$ to $4 \cdot 5\,\mu$ at least. In other words, in the same film we may have some bacilli that are three times as great as others, and to tackle them, presumably, the leucocytes would require to put forth three times the phagocytic effort that would be called for in the case of the smaller specimens. May I venture to suggest that more satisfactory results would be obtained by comparing the sum of the lengths of the bacilli taken up by the leucocytes in each preparation rather than the apparent number of the ingested bacteria? After all what appear to be separate bacilli may often be only portions of one organism, disintegrated in the preparation of the emulsion.

I am, Sir, yours faithfully,

Oban, April 6th, 1908. W. D. ANDERSON.

CORONERS' INQUESTS UPON DEATHS IN SURGICAL ANÆSTHESIA.

To the Editor of THE LANCET.

SIR,—In THE LANCET of March 21st, p. 851, Dr. F. J. Waldo, the coroner of the City of London and Borough of Southwark, complains that the Registrar-General's statistics of the deaths which occur under anæsthetics are not of much use from a statistical point of view because they do not state the particular anæsthetic under which they occurred. He then proceeds to review his own experience with regard to the number which have occurred chiefly in two large charitable institutions within his district during the past six and a half years. The statements which he makes are also valueless because not only does he fail to specify the different anæsthetics under which they occurred, but has not indicated the total number of anæsthetic administrations which were conducted during the period in those institutions, a number which could be stated by their medical authorities with a very close approximation to accuracy. He then goes

on to argue for a coroner's inquest in every case of death during general anæsthesia in order to improve the statistics! I venture to think, Sir, that a poorer argument never was put forward upon a matter of importance. He grows dismal at the contemplation of the fact that "the medical man is not compelled by any statutory obligation to report cases of death under anæsthesia to the coroner." What possible use to the community can arise from a coroner's inquest in such cases when the anæsthetic has been administered by a registered practitioner of medicine?

The consent of the patient and his friends having been previously obtained to the surgical procedure, the anæsthetic is a natural method of attaining that desired object, for the surgical procedure cannot take place without it. In the year 1900 the British Medical Association published the report of their Anæsthetics Committee, which had been at work for nine years investigating the details of 25,920 administrations of anæsthetics. This report is signed by a large number of the best known surgeons, physicians, and special anæsthetists of their day, and extends to 134 large quarto pages, yet the general conclusions contain the following paragraph:—

> From a careful study of the whole facts at their disposal the subcommittee feel that owing to: (1) the large number of factors in the problem; and (2) the personal equations of the numerous recorders it is impossible to arrive at uniformly satisfactory statistics on the several points submitted for their consideration.

Dr. Waldo must either be in ignorance of this well-known committee's work or has a very inflated idea of the value of the opinion of an average coroner's jury of laymen who thus rush in to decide the pathological cause of death where savants have feared to tread. We who daily fulfil the nation's requirements by administering anæsthetics at hospitals and in private practice where the surgeon's help is called for may surely be trusted with the nation's confidence to preserve life wherever and whenever it can be done.

Among the most serious and depressing factors with which we have to deal is an unreasoning fear of an anæsthetic which is increased and fostered by the publication of accounts of deaths during anæsthesia from the coroners' courts (in many cases these are shown not to be due to the anæsthetic but to the nature of the patient's illness or the gravity of the operation). The repetition of the verdicts in accordance with the evidence of qualified medical men does nothing to allay the mischief of the publication of the fatality. If a patient is dying from heart disease in a hospital ward humanity leads us to screen him off from view, not to call aloud to other patients, "Look what may happen to you as a result of rheumatic fever."

Our most carefully collected statistics give the death-rate from chloroform at 1 in 3162 administrations, from ether at 1 in 16,302, and from mixtures of these two anæsthetics at 1 in 5558. The public knows that every surgical operation itself entails some risk of fatal complications and cheerfully accepts it, though this can never be put into figures owing to variation in the personal equation of the patient, his environment, and state of vitality at the time. When a fatal result occurs after an operation neither the public nor the law calls for public inquiry into the cause of death because it is a natural and inevitable consequence that a certain proportion of patients will always die from these well-understood causes. The public also know that given the above statistics with regard to anæsthetic administrations it is a natural result that a certain proportion of patients will die partly also from the anæsthetic.

Now let us inquire in what cases according to the present law an inquest must be held. The Coroners Act only says "where the coroner suspects that the death was of a violent or unnatural kind." When a coroner can be informed by two registered medical men who were present at the death what the patient died from it can hardly, in the first place, be held that he could of his own medical knowledge "suspect" another cause. Secondly, a death in a beneficent unconsciousness cannot be held to be "violent."

Thirdly, what is a "natural death"? Webster's Dictionary, under definition 8 of the word "natural," states "produced or coming in the ordinary course of things." In the ordinary course of things, as I have shown, it has been known for the past 50 years that there must be a definite mortality in general anæsthesia, therefore a death under an anæsthetic administered by a registered medical man, who alone is competent by his training to undertake the work, is not an unnatural death but a death which must and will occur "in the ordinary course of things" in a certain small number of instances. A coroner is not thus bound by law to hold an inquest in these cases but may accept the certificate of the registered medical men present at the time as to the cause of death.

I have shown, Sir, that these inquests are not required by law and that the jury's verdict must merely repeat medical evidence and cannot in any way add to our knowledge. I consider that they are not only a waste of public time and money, but also from my own intimate knowledge assert that they jeopardise the lives of a percentage of patients, for the publication in the press of accounts of such inquests only succeeds in terrifying the nervous and actually increases the mortality under anæsthesia by disseminating a falsely exaggerated idea of its risks, which produces a physical condition of pallor and feeble heart action from mental fear at the moment when such a patient's turn comes for an inevitable surgical operation.

I am, Sir, yours faithfully,

H. BELLAMY GARDNER, M.R.C.S.Eng., L.R.C.P.Lond.
Late Instructor in Anæsthetics and Anæsthetist at Charing Cross Hospital; Anæsthetist at St. Mark's Hospital for Fistula, the National Orthopædic Hospital, and the Male Lock Hospital; Assistant Anæsthetist at the Royal Dental Hospital of London.

April 6th, 1908.

To the Editor of THE LANCET.

SIR,—The discussion at the Medico-Legal Society on the anæsthetic fatality question so fully reported in to-day's issue of your journal will be read with keen interest by everyone who has to do with anæsthetic work and medical education. I would have very much liked to have been present at the meeting, and I cordially agree with Dr. F. W. Hewitt when he says at least by far the largest proportion of deaths are preventable. That some are quite unavoidable a casual perusal of the Transactions of the Society of Anæsthetists will convince most people and also will serve to make clear to them what exceedingly grave cases the anæsthetist has occasionally to undertake. As to the instruction to which Dr. C. Templeman refers as taking place in Dundee, I think anyone who knows the student must admit that instruction *which is not certificated* cannot be relied on as having taken place in individual cases, and sometimes the student can manage to get a certificate without having ever earned it. Crowded as the present curriculum unhappily—if unavoidably—is, the medical student for the most part does what the enactments of the special examining body he is concerned with compel him to do, and nothing more. There is no shadow of doubt that a comparatively large proportion of men qualify (so far as the obtaining of a diploma is concerned) without ever handling ether or chloroform. As Dr. J. F. W. Silk points out, alarming the public unduly is not desirable in their own interest, but at the same time it is surely best that the public should realise that there is a very considerable risk connected with the administration of anæsthetics which it is mere folly to unduly minimise and which should be adequately arranged for. Certainly screaming columns in the halfpenny press are most undesirable. The coroner's inquest must always be a horror to those occupied in giving anæsthetics. But at the same time if the person responsible wishes it, I think in Scotland it is perhaps undesirably easy to return death occurring from or under chloroform as "from natural causes."

Inquests or no inquests, the main question is more teaching, better teaching, and more experience, *with proper guidance*, for the student, tending, as Sir Alfred Fripp put it, to "the leavening up of the whole profession." This question has already been up on several occasions before the General Medical Council. Last year it was referred to the Education Committee and I understand they decided that the various examining bodies should be recommended to make the teaching of anæsthetics compulsory, and enforce the presentation of a certificate in regard to such instruction by all candidates for their diploma or degree. Doubtless as a result of the memorial sent them from the Medico-Legal Society they will take further action in the matter, since so few of the examining bodies have taken the previous hint. It is to be earnestly hoped, however, that, if the instruction of students in anæsthetic work is made compulsory all round, the Council will see to it that their enactment is framed in such a manner as to be effective and not farcical.

It must be borne in mind that there are a number of surgeons and teachers of whom the gentleman I mention

below is a type. Whose confession of faith—*quâ* anæsthesia—might be briefly expressed somewhat as follows: (1) there is one anæsthetic, and that is chloroform; (2) chloroform may be given anyhow, anywhere, by anyone; (3) if a patient during the course of any anæsthesia shows signs of impending dissolution he is said to take the chloroform badly! (4) if he does nothing of the kind he is said to take it well; (5) if the patient unhappily succumbs, then it is "an act of God" (as defined by the late Lord Young); (6) an anæsthetist may be defined as "a latter-day nuisance of no use to the surgeon and a curse to the general practitioner"; (7) "there is no need more for the anæsthetist than for a hypodermic injectionist or other poisonist."

Lest I seem to exaggerate let me cite the following. I happened a few days ago to get on to the subject of the teaching of anæsthetics and the present movement in that relation with a surgeon of acknowledged ability and operative dexterity. He immediately gave it as his deliberate opinion that there was no more need for such special instruction than for special instruction in the use of the syringe commonly associated with the name of Higginson! I may say it was put a little more baldly. In reply to my query if "as surgeon in charge of a case he prepared to superintend the anæsthetic and remove some feet of gangrenous bowel, for instance," he replied "Certainly." Time and place scarcely permitted of further discussion, but I challenge that gentleman here and now to amplify his views and state them at length, *coram populo* as it were, and you, Sir, whose motto has always been "Audi alteram partem," will surely afford him the hospitality of your columns. Pray let us hear him. I submit that such an attitude argues a magnificent self-reliance, I had almost said *self-assurance*, and possibly a scarcely justifiable belief in the hyper-development of his five senses. It is plain that either the anæsthesia or the operative technique must suffer under such conditions and I think some ground is given for the remarks occasionally made in certain quarters that patients are too much used as "*clinical material*." There can be no question as to the greater risk run by the patient.

Now such a position is taken up for several reasons. One is the possession of a hidebound prejudice and unwillingness to accept any sort of reform or progress; another is a determination not to allow anyone or any circumstance to detract from the supremacy and magnitude of the surgeon. To the financial aspect of the question I hardly care to allude; at any rate, that question has been recently threshed out in your columns on general principles by Dr. F. W. Forbes-Ross. It would be unfair and ungracious of me in the extreme if I did not freely and gratefully acknowledge that there are many surgeons who welcome one's presence at an operation and readily admit their disinclination—nay, their incapacity—to take charge of the anæsthetic as well as carry out some grave surgical operation, or indeed a comparatively trifling one. But a class of surgeon and teacher such as I mention exists and has to be reckoned with. And further, they will readily grant a student a certificate as to "instruction in anæsthetics" when possibly the man has merely given chloroform five or six times—in the same theatre in which they are operating.

In the Edinburgh school the late Professor Annandale was the first to recognise the clamant necessity of proper instruction of students, and in view of his seniority all honour to him. On the lines laid down by him some six years ago teaching has since been conducted in the Royal Infirmary, so far as his wards are concerned.

I am, Sir, yours faithfully,

THOMAS D. LUKE,
Lecturer on Practical Anæsthetics at the University of Edinburgh.

Edinburgh, April 4th, 1908.

THE PRESENT PROSPECTS OF THE MEDICAL PROFESSION.

To the Editor of THE LANCET.

SIR,—Dr. Forbes-Ross admits that "the patient or the patient's friends must needs agree" to the proposed division of fee between the consultant and the general practitioner, and Dr. Saundby concedes that if the facts are fully disclosed the proposed division would be a "perfectly honest and fair transaction." Obviously, if the full facts were *not* disclosed the transaction would amount, as Dr. Saundby points out, to a secret commission received from the consultant by the general practitioner. If the practice advocated by Dr. Forbes-Ross were to become common, how would it work? How would a patient, perhaps a commercial man himself, regard a proposal from his medical attendant in some such form as this? "You need an operation. I recommend Mr. ———. The total fee will be so much, of which one-third will be returned to me on the nail for my services in assisting at the operation and afterwards." The patient from his own knowledge of commercial transactions might not improbably ask whether a rebate of one-third was not rather a large one, and whether all surgeons offered the same attractive terms. It is obvious that if one consultant offered a large rebate to the general practitioner and another consultant a small one or none, the practitioner who recommended the former would risk the accusation of desiring the highest rebate rather than the highest skill. No amount of specious argument ought to blind us to the essential dangers of Dr. Forbes-Ross's proposal. In practice it would soon come to mean the bribery of general practitioners by consultants for the sake of gaining their patients, because the system of rebates is not one which in practice could be openly avowed to any patient with common sense.

When Dr. Forbes-Ross says that the general practitioner is as much entitled to be paid for his services in connexion with the operation and afterwards as the consultant all will agree with him. Further, if it were the custom to recognise and pay for those services at the same time as the consultant is paid I think it would be a good practice, but that payment should be made directly by the patient to the general practitioner and never by the consultant out of his fee.

I am, Sir, yours faithfully,

April 8th, 1908. EDWARD DEANESLY, F.R.C.S. Eng.

THE TREATMENT OF "MANIA"?

To the Editor of THE LANCET.

SIR,—I am under an obligation to THE LANCET in its issue of March 28th for a fair and generous criticism of my little text-book upon "Mental and Sick Nursing," but your reviewer credits me by implication with a want of sympathy in this volume for the so-called "bed treatment" for cases of mania. I need hardly state that this is not the case, for on p. 76 I refer to the great advantage secured by rest in the recumbent position in bed for days together, and during which period I advocate, if the circumstances demand it, a generous treatment of dietary, and in order to save life supplemented if necessary by forced feeding. Again, on pp. 146 and 147 various details are given as to the preparation and administration of nourishment in regard to forced alimentation. Your reviewer somewhat categorically states that the day for the treatment of acute cases of mania by vigorous outdoor exercise is past, but I ventured to point out in my book that such patients when taken out into the freedom of gardens and open places put forth fewer efforts at violence and restlessness than when kept in bed, even when the bed itself is located in the open air. In support of this, witness the struggling of patients tied down to ambulance carriages by various instruments of mechanical restraint and its complete cessation when they are released upon their admission into the asylum, where, I need hardly say, the application of restraint even for acutely maniacal patients is practically unknown.

There seems to be an unsettled tendency in these materialistic days with regard to medical treatment generally, and the flood of pamphlets, vaunting unfailing remedies for the cure of all human ills, which is blown into one's waste-paper basket from Germany and America, and indeed from all the four winds of heaven, is evidence of this, as well as of the inadequacy of the so-called "drug" treatment. We know too well that there are advocates for the exclusive treatment of insanity by medicines, and the old notion is still urged that unless "medicine out of a bottle" is prescribed there is no "hospital treatment." Indeed, I am frequently asked by advocates of this school of treatment, "What drugs do you use directly to affect the brain?" Some, however, wear their rue with a difference and at all cost advocate no drugs, only the exclusive application of "bed treatment"—not infrequently the cause of sleepless and restless nights, tossing off of bedclothes, and consequent chills. Others there are who advocate a rigid dietary with the sole object of controlling the "intestinal flora," veritably

believed and looked upon as being the *causa causans* of mental disorder. Moreover, there are not wanting those who consider the fine flower of attainment in the cure of insanity to be the application of serum therapy by intravenous injection, which alone they suggest can control toxic agencies and re-establish the normal bio-chemistry of the vital organs.

After nearly 30 years of experience of mental diseases, ranging considerably over 12,000 cases of all forms and varieties of insanity—using these terms in the sense interpreted by Mercier—I am convinced that the proper treatment of insanity must be the study of each case upon its merits and that to advocate any special treatment as the exclusively correct method is to establish the "idol of a cult" which subsequent experience will inevitably demolish as has already occurred in the past. Whilst so much and strenuous importance appears to be laid upon either the "drug" treatment, or the so-called hospital treatment, or bed treatment in open places, I feel compelled to enter a protest against any one method and also to regret that, in my opinion and that of many others, too little importance is being attached to the purely mental influences—viz., the influence of one mind upon another, whereby qualities such as insight, tact, common-sense, inspired by a feeling of brotherhood and sympathy, fail to receive due appreciation. These mental influences are qualities which should have a higher recognition in the treatment of the insane, for they alone can suggest lines of thought which will facilitate to him the normal appreciation of the outside world, these alone are capable unobtrusively of controlling disordered volition—both inwardly by encouraging self-control and outwardly by directing conduct along reasonable and right channels. Surely it will be acknowledged that at all times and in all ages of medical knowledge the cure of disease has not been wholly or entirely by physical means, but by a judiciously utilised appeal to reason associated always with the coöperation of the patient. These qualities, in my opinion, have ceased to secure their due and formerly recognised place in dealing with variations of that subtle *something* which characterises and distinguishes man—viz., the possession not only of consciousness but of self-consciousness, the capacity not only of exercising a "will" but of having an outlook into the unknown future of time and life. The impression is left upon my mind that your reviewer is dominated by an "idol."

I am, Sir, yours faithfully,

Claybury, March 31st, 1908. ROBERT JONES.

THE INTERNATIONAL SOCIETY OF TROPICAL MEDICINE.

To the Editor of THE LANCET.

SIR,—I am in receipt of a letter from Professor Nocht, deputy-chairman of the German Society of Tropical Medicine, in which he states that the first meeting of that society will be held on April 15th–16th, 1908, in Hamburg; and that the members of the German society will be very happy to meet members of allied societies from abroad. Professor Nocht has requested me to make this fact known. The opening meeting will take place at 9 A.M. on April 15th in the Institut für Schiffs- und Tropenkrankheiten, Hamburg.

I am, Sir, yours faithfully,

G. H. F. NUTTALL,

Cambridge, April 3rd, 1908. Honorary Secretary-General.

WHY SILK?

To the Editor of THE LANCET.

SIR,—Silk may be regarded as a type of the material employed for ligatures and sutures which, after burial in the tissues of the human frame, if neither extruded nor removed, persists for many months or even years. The heading of this letter is suggested by perusal in recent surgical literature of the following cases.

In the "Annals of Surgery" for November, 1907, Mr. H. M. Rigby describes the removal by an iliac incision of a calculus impacted in the ureter. The ureter was closed by silk sutures. Symptoms recurred. Another calculus was removed from the ureter and two more calculi were passed per urethram. Each of these last three calculi had as a nucleus a silk ligature. Mr. Rigby now advocates suturing the ureter with catgut. In THE LANCET of March 21st, 1908, in his first Lettsomian lecture, Mr. Charters J. Symonds records five cases of nephrectomy, performed for tuberculosis of the kidney. In four of these cases the behaviour of the ligature was as follows.

CASE 1.—Operation in 1907. The pedicle was secured with silk. "The loin sinus did not close till the ligature came away nearly six months after operation."

CASE 2.—Operation in March, 1907. The pedicle was secured with silk. "The drainage-tube was removed in two days and apparently primary union followed." "About six weeks after operation the loin became swollen and a low form of suppuration developed." In November, 1907, there was "a return of many of the symptoms existing before nephrectomy." "In the absence of bacilli I attributed the symptoms myself to the loin sinus kept up by the pedicle ligature. This was removed under ether."

CASE 4.—Operation in November, 1907. Material of pedicle ligature not stated, but on Jan. 8th, 1908, seven weeks after operation, "the sinus in the loin, though giving little trouble, will no doubt continue to discharge till the ligature comes away."

CASE 5.—Operation in November, 1897. "The ureter, very thickened, was ligatured and the silk brought out through a rubber drain, into which the end of the ureter was drawn. The ligature came away some eight months after operation."

I am, Sir, yours faithfully,

Plymouth, March 26th, 1908. C. HAMILTON WHITEFORD.

CHOLERA AND PLAGUE IN THE HEDJAZ AND ELSEWHERE.

(BY THE BRITISH DELEGATE TO THE CONSTANTINOPLE BOARD OF HEALTH.)

SINCE the time of writing my last letter, published in THE LANCET of Feb. 29th (p. 678) the cholera outbreak in the Hedjaz has almost completely come to an end. In Mecca no cases were observed after Feb. 8th. In Jeddah, where 113 cases of the disease with 95 deaths had been recorded in the week ending Feb. 2nd, only 15 cases and 25 deaths were seen between Feb. 3rd and 8th; on the three following days 5 fresh cases and 8 deaths were registered, and after the 11th not a single case or death appeared to have occurred there. In Yanbo, where 18 cases and as many deaths had occurred in the week ending Feb. 3rd, there were 8 cases and 8 deaths between Feb. 3rd and 13th, 3 cases and 3 deaths between the last-named date and Feb. 20th, and 13 cases with 10 deaths from that date to March 11th.

The total number of cases of cholera in the principal towns of the Hedjaz since the beginning of the epidemic on Dec. 13th last down to March 11th is put at 6378 and that of deaths at 5695. But these figures do not include the statistics of the outbreak to the north of Medina and in connexion with the Hedjaz railway. They are also probably considerably below the truth, even for the towns to which they refer. Written reports are now being received from the health officers of some of those towns and these furnish some details of interest which supplement the bare figures hitherto alone received by telegraph. Thus in Jeddah there were two periods of the epidemic. In the first, which lasted from Dec. 27th, 1907, to Jan. 7th, 1908, some 20 deaths occurred; these all resulted from infection imported by four pilgrims' ships arriving at Jeddah from Yanbo (as described in an earlier letter). Then from Jan. 7th to 17th there was a cholera-free period; on the 17th the caravans began to arrive back at Jeddah from Mecca and a second and much more severe epidemic period set in which lasted until Feb. 11th. In all, 416 cases of cholera with 379 deaths were registered in Jeddah. Of this total 182 cases occurred among Indian pilgrims, 64 among Turkish, 41 among Bokhariots, 24 among Soudanese, 21 among Russians, 16 among Yemenis, 15 among Afghans, 11 among Tripolitans, and the rest among Chinese, Egyptians, native Arabs (only 8 cases), Algerians, Javanese, Tunisians, Bosniacs, Persians, Europeans, Albanians, and Somalis. The maximum period of the epidemic fell on Jan. 24th. Very few cases were isolated in the barrack which does duty for a hospital in Jeddah. Most of those afflicted seem to have died in the streets and the sufferings of the pilgrims were greatly increased by torrential rains which fell incessantly for 48 hours. It is stated, however, that the infection did not seem to have been spread by water. The new distilling apparatus which the Turkish Government has put

up as the result of pressing representations made by the commission of inspection which (as described in THE LANCET last year[2]) visited Jeddah and the Red Sea lazarets two years ago is now completed, but it was apparently not in time to be of much use this year for the pilgrims, except towards the end of the Hajj. It is said to furnish good water, which is being sold at about 1½*d.* a tin holding approximately three gallons. There was no dearth of water, however, this year owing to the good rainfall. The clinical character of the disease in Jeddah was very well marked; most of the cases were of a severe form and algidity and cyanosis were specially prominent symptoms. Many cases were fulminant in character; in one instance one of the medical officers himself saw a pilgrim seized with the first symptoms of the disease. These were sudden vomiting and intense watery diarrhœa, the evacuations being shot out "as by a piston," and in a quarter of an hour the man was dead. It will be seen that only 37 cases out of a total 416 are known to have recovered. No doubt, however, several cases that recovered did not come to the knowledge of the authorities.

The recent behaviour of the epidemic along the Hedjaz railway is not easy to follow in detail owing to the scanty nature of the information received by telegram from those regions. The following facts, however, may be gathered from those telegrams. At Hedieh (about 200 kilometres north of Medina) there were no cases between Jan. 25th and 30th and 3 cases and 2 deaths on the 31st. Then followed several days when the records of Hedieh are confused with those of the region between that town and Bir-ul-jedid to the north. Thus, on Feb. 2nd there were 3 cases among men of the 3rd Company of the 2nd Railway Battalion, working between the two named towns; on the 6th there were 7 cases and 1 death "in places beyond Bir-ul-jedid, Hedieh included"; on the 7th 7 cases and 1 death "at Hedieh"; on the 9th 2 cases and 6 deaths; and on the 10th 2 cases and 4 deaths at the same place. Then follows a long silence in regard to Hedieh, and on March 5th a telegram stating that no case had occurred there "for 20 days," followed by another telegram on March 21st to the effect that "there had been no case for 17 days in Hedieh or the neighbourhood."

As to the record of the disease in Bir-ul-jedid itself (where it will be recalled passengers as distinguished from pilgrims did their quarantine) it is still more imperfect. On Jan. 26th 3 cases and 1 death occurred there; on Feb. 3rd no case and 2 deaths, and on the 8th 1 case and 3 deaths; and that is all that is known at present. But greater interest attaches to events at Medaini-Salih, where the improvised pilgrims' quarantine station was established. The *Mahmel* or Holy Caraven arrived there on its return journey on Feb. 24th, coming in two trains, and consisting of an undetermined number of pilgrims (the number has been variously given as 6000, 10,000, and 20,000). It had had apparently 4 cases of cholera with 2 deaths on its journey from Medina to Medaini-Salih. The day after its arrival (Feb. 25th) there were 16 cases of the disease with 5 deaths in the Medaini-Salih camp. Other caravans appear to have arrived there at the same time and all the pilgrims composing them are said to have been suffering from intense thirst. Harrowing scenes seem to have been witnessed on their arrival at the camp; they threw themselves on the vessels containing the water-supply and much of the water was lost in the struggle. The following is the further record of the outbreak in the camp:—

Feb. 26th	9	cases,	2 deaths.
,, 27th	10	,,	5 ,,
,, 28th	21	,,	4 ,,
,, 29th	1	,,	7 ,,
March 1st*...	0	,,	1 ,,
,, 2nd†...	0	,,	0 ,,
,, 3rd	8	,,	3 ,,
,, 4th	5	,,	3 ,,
,, 5th‡	4	,,	5 ,,
,, 6th§	1	,,	2 ,,
,, 7th‖	1	,,	0 ,,
,, 8th	0	,,	1 ,,
,, 9th	0	,,	0 ,,

* And 1 case among a fresh batch of 600 pilgrims.
† But 16 cases and 6 deaths in a fresh batch of 1600 pilgrims.
‡ There were now 10,000 pilgrims in the camp; 96 cases of cholera had occurred to date.
§ The Holy Caravan left. ‖ Fresh caravans still arriving.

Finally, on March 17th it was stated that there had been no fresh case for ten days and on the 21st that there were still no new cases, though 15 convalescent cholera patients remained in hospital and a fresh caravan of 350 pilgrims had arrived only that evening.

The outbreak of plague in Jeddah still continues and the infection has been carried to Yanbo, where it has also caused a considerable mortality. The following figures (for Jeddah) are in continuation of those in my last letter on this subject:—[1]

From Feb.	9th	to Feb.	16th	12 cases,	12 deaths.
,, ,,	17th	,, ,,	22nd	6 ,,	6 ,,
,, ,,	23rd	,, March	1st	11 ,,	11 ,,
,, March	2nd	,, ,,	7th	3 ,,	2 ,,
,, ,,	8th	,, ,,	15th	9 ,,	8 ,,
,, ,,	16th	,, ,,	22nd	4 ,,	4 ,,

Plague seems to have made its appearance in Yanbo on Feb. 13th. It is said to have been imported from Jeddah by the s.s. *Alexandria* which arrived at Yanbo on Feb. 9th, having on board a stoker ill with the disease. The ship was repulsed to Jeddah for disinfection and rat destruction but the infection had already been carried ashore at Yanbo, where the following cases and deaths have since occurred:—

From Feb.	13th	to Feb.	20th	13 cases,	12 deaths.
,, ,,	20th	,, March	5th	11 ,,	10 ,,
,, March	8th	,, ,,	11th	9 ,,	9 ,,
,, ,,	12th	,, ,,	18th	19 ,,	19 ,,

In all, since the beginning of the epidemic in Jeddah, there have been 123 cases of plague and 117 deaths in the two towns of Jeddah and Yanbo.

In addition to the above 4 cases of plague have been imported to the Camaran lazaret, two on board the s.s. *Budrie*, and two on the s.s. *Shahallum*, both of which ships were returning from Jeddah, and at the Tor lazaret a single case of pneumonic plague was landed from the s.s. *Abdul-Kader* on March 5th and another from the s.s. *Gharb* on March 15th. The last case was of the septicæmic form, with a hæmorrhagic exanthem; it ended fatally.

Constantinople, March 27th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Ravages of Sleeping Sickness: the Expedition to Rhodesia.

THE Liverpool School of Tropical Medicine, in conjunction with the Government and the British South Africa Company, despatched an expedition in May, 1907, to Rhodesia to study sleeping sickness and the distribution of biting flies which disseminate that disease. Sir Alfred Jones, K.C.M.G., the chairman of the school, has recently received a report from the expedition, dated Madona, Jan. 28th, 1908, specifying that the "fly" glossina palpalis has been found on both sides of the Luapula from Kapwepwi's to Kasiwa's, a village about two days' journey south of Lake Mweru (by Dr. J. C. Spillane and the expedition). It has also been found by Dr. Spillane along the whole of the British coast of Mweru, around the south end of Lake Tanganyika, and also along parts of the larger confluents of the Luapula and Kweru, notably the Mansa and the Kalungwisi. The expedition found it on the Luongo, a short distance from its mouth. From Kasiwa's to Mweru, on the British side, the Luapula is bordered by swampy plains some miles in width, so that the conditions are unfavourable for this fly. On the Belgian side this does not obtain to such an extent, so that the fly is probably present, although the expedition has no definite knowledge as to this. Glossina morsitans, and possibly the closely related pallidipes and longipalpis, is widely spread over the country, however. On the road from Broken Hill to Fort Jameson the expedition found the flies at one spot in the Machinga hills, from the base of these right across the Luangwa to within a day's journey of Petauke and near the Sasare mine. From Fort Jameson to the Luapula they occur from the Luangwa to the base of the Machingas. There is a sudden rise here to the plateau of 2500 feet or so, and on the top of the hills the members of the expedition did not see the flies again until they arrived at the Kasanka river. In this vicinity

[2] THE LANCET, July 13th, 1907, p. 117.

[1] THE LANCET, Feb. 29th, 1908, p. 678.

they are very plentiful and stretch over to the Luapula and up north past Chitambo's through the country to the east of Bangwenlu. They may be said to be found in most of the Luapula division. The expedition has found three cases of sleeping sickness, all with a history of having worked in the Katanga mines. All had markedly enlarged glands and appeared perfectly healthy. The fly glossina morsitans was present in the village in which at least one case lived. Considering the thousands from this country who have worked in the Katanga mines it is likely that there are many more cases scattered through North-Eastern Rhodesia as the labour was not drawn from any one particular district. All the work goes to show that the transmission is mechanical. While this is not sufficient to account for the rapid spread of the disease in view of the great difficulty experienced in getting positive results, it is a fact which cannot be too strongly emphasised. There is a tendency to regard glossina palpalis as the only infecting agent. That this is not so has been shown by the work in Uganda where successful transmission experiments were made with glossina fusca. Again, the work on cattle trypanosomes shows that while one or two species are normally concerned in the extension of the disease, it is quite possible to effect this by the use of not only other species of tsetses but also other distinct genera—e.g., stomoxys and tabanids. This surely is sufficient to demonstrate that at present all biting flies, and particularly all species of glossina, must be regarded with suspicion. In this connexion one must refer to the report that some observers in the Congo Free State implicated stegomyia fasciata. This has to be proved. While, perhaps, the task of controlling the spread of sleeping sickness would become impossible if every biting insect had to be considered it is not so with regard to the tsetse flies. The question of the etiology of the disease is in a more unsatisfactory condition than the treatment, at all events from the prophylactic view, and it is most important that some definite effort should be made to find exactly what flies, tsetse and others, are capable of carrying the virus. As to enlarged glands, a fairly large percentage of the natives (roughly from 30 to 40 per cent.) have palpable glands which come chiefly under one group of Dutton and Todd's classification, though there are also many of another group of glands. On puncture the result was found to be uniformly negative. This occurrence of enlarged glands rather complicates the diagnosis, for it means that the statement "every negro with enlarged glands must be considered, until the contrary is shown, to be a case of trypanosomiasis" cannot be accepted for North-Eastern Rhodesia and, presumably, for Nyassaland as well. Consequently, a trained medical officer is the only person who can look for the disease satisfactorily since puncture is necessary. The British South Africa Company should have special medical officers to travel through the country looking for cases and getting them isolated at once. Whether it will be necessary for like measures to be adopted in Nyassaland is uncertain as yet. The chief danger for the Protectorate lies in the spread of the disease to the north end of Lake Nyassa. Trypanosomiasis is endemic on Tanganyika at Vua in the Free State, a short distance above the Congo-Rhodesia border, and between the people on either side of this there is unrestricted communication. Glossina palpalis is found right round the southern end of Tanganyika, so that it is extremely probable that cases of the disease are present in that part of the country. Whether the disease is to be found in German East Africa is not known. At the north end of Nyassa glossina fusca has been found and this, we know, can carry the disease. If once a case reaches a place where these flies occur an epidemic might easily be started. Natives of the Protectorate are carrying loads from Karonga to Kasama, and as large numbers of natives from the Awemba district of North-Eastern Rhodesia have worked in the Katanga, cases probably exist amongst them, and the possibility of their infecting negroes from Nyassaland must not be overlooked. It therefore seems that the north end of Nyassa is the part which requires most attention from the authorities of the Protectorate. It would also be well to bear in mind that natives of the Protectorate have been working in the Katanga and some are only returning home now. Some of these may be infected. In connexion with the foregoing report the British South Africa Company has taken elaborate measures, through Dr. Spillane, to combat the spread of sleeping sickness, with which measures the sleeping sickness expedition of the Liverpool School were possibly not acquainted at the time when their report was sent. Dr. Spillane's report is dated Fort Jameson, Jan. 20th, 1908.

April 7th.

NEWCASTLE-UPON-TYNE.

(FROM OUR OWN CORRESPONDENT.)

Convocation of the University of Durham.

IN accordance with the University regulations a convocation of the University was, as is usual at the end of the winter examinations, held at the College of Medicine, Newcastle-upon-Tyne. In the absence of the warden, Dr. F. B. Jevons, subwarden of the University, presided. Sir Isambard Owen, Principal of Armstrong College, presented the Bishop of Newcastle for the degree of D.D. *honoris causâ*, and in doing so briefly sketched Dr. Straton's career, and concluded by saying that the University of Durham desired to offer the Bishop its cordial and respectful welcome. Ordinary degrees in medicine, surgery, and hygiene were then conferred, and the examiners for the summer examinations in the various faculties were subsequently appointed. Convocation was followed by a luncheon given in the council room of the College of Medicine by the president and members of the College to which the Bishop and many other guests and officials were invited. The various examinations in the Faculty of Medicine were concluded and the lists published on April 3rd.

Alterations of the Dates of Examinations.

The examinations just concluded were the first to be held under the new arrangement which permits of the examinations being held immediately at the end of the winter and summer sessions instead of as heretofore in the middle of the months of April and September. Under the old *régime* the benefit of the vacations was largely destroyed for both the teaching staff and the students and the alteration of the dates of the examinations whereby they are to be held in future at the end of March and the end of July is universally welcomed as being to the advantage of all parties.

Heath Chair of Comparative Pathology and Bacteriology in the University of Durham.

The late Dr. George Yeoman Heath, a former president of the College of Medicine, to whose generosity and attachment to his profession the College is also indebted for the Heath wing and the Heath Surgical Scholarship, left a sum of money to be invested of which the income was to be devoted to the endowment of a chair of comparative pathology and bacteriology. The professorship was founded in 1893 and Dr. George R. Murray, already then well known for his work on the thyroid gland, was elected first Heath Professor. The work of the new appointment was begun in very small quarters but the success which attended Dr. Murray's teaching and administration soon necessitated the provision of further accommodation. This in turn proved insufficient for the needs of the work. In 1905 a beginning was made with the building of the present Heath wing. Dr. Heath's original intention was that a residential college should be built. It was, however, felt that there was not a sufficient demand for a hall of residence among the Newcastle students of medicine. The council of the College, therefore, with the consent of the trustees of the bequest, applied to the Court of Chancery for leave to build laboratories instead of a residential hall. The Court granted the application, accepting the suggestion of the trustees and council that the building should consist of students' rooms on the ground floor, physiological laboratories on the first floor, and laboratories of comparative pathology and bacteriology on the second floor. Into these admirably arranged and well-equipped laboratories Dr. Murray removed his department at the commencement of the winter session 1906. In spite of the interest which Dr. Murray has always had in his department and of the success which has attended his administration and teaching, he has always held that Dr. Heath's real hope was that a time would come when the holder of the Heath Professorship would be a man who would give his whole time to the department. The question of finance stood in the way. But having satisfied himself that he had overcome that difficulty and that he was now able to realise what he believed to be Dr. Heath's wish Dr. Murray placed his resignation in the hands of the council of the College at its meeting on March 4th, explaining his interpretation of the intention of

the bequest. The resignation was accepted with much regret but with full recognition of Dr. Murray's public-spirited action. Dr. Murray, as the first holder of the Heath chair, has left a record which will always serve as a standard for those who will follow him in the professorship. Mr. H. J. Hutchens, who has been associated with the College since 1905 first as demonstrator and then as lecturer on bacteriology, has been elected to succeed Dr. Murray. Dr. Murray now succeeds Dr. J. Limont in the University lectureship on medical jurisprudence, Dr. Limont, owing to continued ill-health, having, much to the regret of his colleagues, been obliged to resign his appointment. Dr. Murray will give his first course of lectures during the coming summer session.

Chair of Midwifery.

The lectureship on midwifery has been raised to a professorship. Dr. R. J. Ranken Lyle, the present lecturer on midwifery, has been appointed first professor of midwifery in the University of Durham.

Feeding of School Children in Newcastle.

At its meeting on April 1st the city council of Newcastle passed a resolution that a halfpenny rate should be raised to defray the cost of feeding of school children. The subject of the feeding of school children was first considered by the corporation early in 1907. A special subcommittee of the education committee was appointed, consisting of 24 members, including four members of the medical profession and two representatives of the Charity Organisation Society. This subcommittee was assisted in a consultative capacity by its principal medical officer. Active opposition was raised to the adoption of the Education (Provisions of Meals) Act, 1906, by certain members of the subcommittee who maintained that the case for school feeding was not proved. Those in opposition offered investigation which, however, was not accepted by the subcommittee which reported to the full committee that there was an urgent need for putting into operation the Act of 1906. The report of the subcommittee includes the report of the principal medical officer. This latter report is hardly convincing, as the following extracts will show. He says:—

> Of the ten departments visited I found that seven had never made a list of names and addresses of actual cases. I do not, however, wish it to be inferred from this that the general result of the inquiry is to be distrusted. There was evidently a distinct failure to understand that the inquiry was to be based upon the actual number of indigent cases in the school at the moment, many basing their returns on probabilities. ..... One infants' department returning ten as the number could not show me a single such case in the school at my visit, nor could I detect any on inspection.

On Dec. 18th, 1907, the city council voted £1500 for school feeding. It was very soon found that the committee was being defrauded and it decided now to ask for the investigation which had previously been offered and refused. The results of these investigations have not yet been received.

Newcastle upon-Tyne Clinical Society.

The last meeting of the session of this society was held on April 2nd. Many cases of considerable interest were exhibited, including a case of paralysis agitans in a man, aged 42 years, shown by Dr. George Hall, in which he had been able to trace a family history of tremor in three generations—viz., the patient's mother, one sister, and two children. The responsible officers of the society would do well to organise their meetings so that more advantage could be obtained from the material at the disposal of the members. The meeting on April 2nd was hopelessly confused for want of a little organisation.

Royal Victoria Infirmary.

Dr. A. Parkin and Dr. George Hall have been elected honorary assistant physicians to the infirmary.

April 7th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Vaccination Fees.

SOME months ago the Aberystwyth board of guardians reduced the vaccination fees of the public vaccinators and the medical men refused to accept them as they considered the remuneration inadequate. The matter was eventually referred to the Local Government Board and that authority drew up a scale of fees on the mileage plan. At the last meeting of the guardians the public vaccinators declined to accept either scale of fees. After some discussion it was decided to invite the public vaccinators to meet the guardians in the hope that some amicable settlement might be arrived at.

Medical Inspection of School Children.

A conference convened by the Cardigan county council and education committee was held on April 2nd. It was intended that the conference should give an expression of opinion as to how far it would be possible for the education authority to act in coöperation with the various sanitary authorities in giving effect to recent legislation regarding the medical inspection of school children. It was explained that £380 were now paid to medical officers in the county. The estimated cost of medical inspection was £250, calculated on the basis of 6*d.* per child. After a discussion, in which the medical officers took part, it was decided to recommend that arrangements should be made to appoint the local medical officers for the purposes of medical inspection. Owing to the inaccessible nature of the districts it was considered inadvisable and expensive to appoint one officer for the whole county, but it is intended that a medical officer will be appointed to supervise and to codify the annual reports made by the local medical men.

Notification of Births Act.

At the request of the county council the conference also considered the advisability of recommending district councils to adopt the Notification of Births Act. The medical officers expressed their views in favour of not adopting the Act at present on the ground that it would be practically impossible and useless in a county composed almost entirely of rural districts with large areas. Mr. J. W. Stephens (Cardigan) pointed out that the person responsible for the notification was not clearly defined in the Act and considered that the Government had dealt cavalierly with the profession and thrust upon it duties repugnant to its best traditions. The conference decided to advise the district councils not to adopt the Act.

Cardiff City Mental Hospital, Whitchurch, Glamorganshire.

The opening of this hospital will take place on April 15th next at 3 P.M., by the chairman of the visiting committee, Councillor Morgan Thomas. The guests will be conducted over the institution by the chairman and the medical superintendent, Dr. Edwin Goodall, formerly medical superintendent of the Joint Counties Asylum, Carmarthen, who has been busily engaged in making preparations for the past 12 months. The new mental hospital is situated about three miles north-west of Cardiff and about a mile from Llandaff railway station on the Taff Vale railway. Special conveyances, however, will take the officials and guests between Cardiff City Hall, Cathays Park, and the Mental Hospital. The scientific side of the equipment of the new hospital is considered to be above the average.

Bristol Royal Hospital for Children and Women.

The annual meeting of the subscribers to this institution was held on March 31st under the presidency of Lord Winterstoke. The medical report stated that during 1907 the in-patients numbered 785 (727 children and 58 women), a decrease compared with 1906. The out-patients numbered 4662, as compared with 5500 in the previous year. The financial statement showed that the total adverse balance against the institution was now about £4000. The committee states that as a result of its special appeal for £10,000 (which will be utilised for freeing the hospital from debt, for building a small scarlet fever annexe, and for improvements in the out-patient department) the sum of £5209 has been already received.

April 6th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Medical Education of Women.

AT the eighteenth annual meeting of the Scottish Association for the Medical Education of Women it was reported that the number of students on the roll during the summer session, 1907, and the winter session, 1907-08, was 114, which shows a slight increase over the preceding session. While the report regarding the work of the past year is satisfactory, a serious crisis has unexpectedly arisen which

threatens not only the existence of the association but even the future of the medical education of women in Edinburgh. Minto House, which since 1894 has been the headquarters of the association and of the Medical College for Women in Edinburgh, has been sold without consultation with the association and has to be vacated at the close of the ensuing summer session. The association has placed itself in communication with the University Court and the Carnegie Trust and has reason to believe that some satisfactory solution of the difficulty will be discovered.

Forfarshire Medical Officership.

After much discussion the Forfar county council has decided to appoint a new medical officer of health at the salary of £300, inclusive of outlays. He is to reside in Forfar or the immediate neighbourhood, and with the consent of the Secretary for Scotland he is to be allowed to engage in consulting but not in general practice.

Honorary Degree at the University of Aberdeen.

The degree of Doctor of Laws was granted on April 7th to Dr. William Dobinson Halliburton, F.R.S., Professor of Physiology, King's College, London.

Hospital Sunday in Glasgow.

The total amount received on Hospital Sunday last year in Glasgow was £5026, being £52 less than in the previous year. The sum divided among the infirmaries was £4800, and the same course was followed in making the division as in previous years—namely, in proportion to the number of fully occupied beds in each infirmary. The allocation was as follows: Royal Infirmary, 593 beds, £2068; Western Infirmary, 543 beds, £1893; and Victoria Infirmary, 241 beds, £839.

The Relief of Incurables.

The directors of the Association for the Relief of Incurables in Glasgow and the West of Scotland in their thirty-third annual report state that during 1907 the association had under its care 399 persons—128 in Broomhill Home, 32 in Lanfine Home, and 239 assisted by the outdoor relief department. Not a few applicants had to be refused on account of the scarcity of vacancies. During the past 33 years the association has permanently aided 2012 persons, of whom 755 were cared for as in-patients and 1221 as out-patients. The permanent character of the relief afforded may be gathered from the fact that last year there were in Broomhill Home 26 inmates who had each been there for more than 15 years, and in five instances for more than 30 years, the actual average being 22·4 years. Many of the patients are very helpless, some even requiring to be fed. In the maintenance account there is a heavy shortage. The income for this purpose was £5534 and the expenditure was £7377, leaving a deficiency of £1843.

Glasgow Dental Hospital.

The first public distribution of prizes in connexion with this hospital took place last week. During the session there have been 46 students in attendance on the lectures. Hitherto both the school and the hospital have been maintained largely by the fees of the students. In no year since the foundation of the hospital have the public subscriptions reached £100. As the hospital is a public charity and only incidentally serves in some manner for the training of dentists it ought to receive more support from the general public.

April 7th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Insane Returned Emigrants.

A GRIEVANCE of peculiar type (and of specially deplorable origin) to which Irish ratepayers are subjected in the matter of maintenance of pauper lunatics who are not properly chargeable to the district has often been the subject of discussion. The annual report of Dr. F. C. Ellison, resident medical superintendent of the Castlebar Asylum, gives prominence to the subject. Dr. Ellison points out that the number of emigrants who have returned to Ireland suffering from insanity is very serious. They are nearly all females. At the present date over 80 of the inmates of his asylum, or about 11 per cent. of the total number of its occupants, are persons who developed insanity elsewhere than in Ireland. The great preponderance of females among these points, he considers, to the overwhelming mental strain to which young girls must be subjected when they leave their quiet country homes and enter the turmoil and trials of life in American cities. Sometimes the return is voluntary but in other cases it is carried out by compulsory deportation; and the unhappy emigrant victims of insanity are destined thenceforward to remain a burden on the local rates. The facts and figures produced in Dr. Ellison's report form a most powerful argument against the system of emigration.

Health of Belfast.

At a meeting of the city corporation held on April 1st the chairman of the public health committee admitted that "the death-rate from all causes was rather high during the past month." The death-rate was 27·4; the death-rate from chest diseases was 12·2 (the normal rate being, say 7·0) which the medical officer of health says is "largely due to climatic conditions" and "over which they had practically no control." But an attempt should be made to explain why Belfast is so different in its high general death-rate and in its mortality from chest diseases from other similarly situated cities. Four cases of typhus fever were notified during the past month.

April 7th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Dislocation of the Carpus.

AT a meeting of the Surgical Society held on March 18th M. Delbet gave a short *résumé* of three papers which had been handed to him by M. Ferron, M. L. Bazy, and M. Picqué. The subject dealt with was dorsal dislocation of the os magnum without dislocation of the semilunar, to which, however, were sometimes attached fragments of the scaphoid and of the cuneiform if these happen to be fractured. Fracture of the scaphoid is common and occurs in quite half the cases; as a rule, these injuries are brought about by a fall upon the hand in extension. After the accident the hand is generally found to be in a position midway between flexion and extension, but one constant symptom is an increase in the antero-posterior diameter of the wrist situated on a lower plane than is the case with fracture of the lower extremity of the radius; flexion and extension of the hand are extremely limited. In a certain number of cases phenomena due to nervous compression have been observed, being in most cases caused by interference with the median nerve; as to treatment, massage is quite insufficient and a cutting operation is usually necessary. The result of simple reduction is not, as a rule, as good as that seen in other dislocations. Reduction should only be attempted in quite recent cases, the practitioner being prepared to operate in case this fails.

Statistics as to Students.

It is probable that the number of students for the current year will be considerably smaller than formerly and the following figures may be quoted in support of this argument. Students of law have this year increased by 1000, following an increase of 3000 in the last seven years. Students of medicine have decreased by 1200 and students of pharmacy by 800. The public will now perhaps commence to appreciate the fact that the career of medicine, owing to its disabilities, is becoming much less attractive than before.

The Therapeutics of Colloidal Silver.

At a meeting of the Therapeutical Society held on March 25th M. Hirtz gave an account of four cases of broncho-pneumonia which had recovered very rapidly under injections of colloidal silver. Within 24 hours after the injections the amelioration in the general condition was very marked and the temperature had dropped; no other drug was employed.

Scarlet Fever.

Scarlet fever, which had been decreasing for some time past, has now broken out anew in a virulent form in the barracks of Paris. The epidemic commenced in the suburban district; then the troops in the barrack of Neuilly were attacked and some of them died. There have been 30 cases and three deaths. All the necessary measures to secure the safety not only of the soldiers but of the general population have been taken.

The Consumption of Tobacco.

In 1907 the tobacco monopoly brought in 377 million francs, being an increase of six million over 1906. There were sold 2½ million kilogrammes of cigars, and about the same quantity of cigarettes; 28½ million kilogrammes of cut tobacco, or in all 33½ million kilogrammes of smoking tobacco. In addition there were sold 5 million kilogrammes of tobacco in powder and a little more than a million kilogrammes of cake tobacco. The sale of cigarettes, which in 1872 brought in scarcely 1 million francs, rose to 17 million in 1882, and for some years remained about this figure. Last year, however, it brought in 72 million, and, moreover, during the last three years the consumption of snuff has markedly increased. On the contrary, the sale of cigars, especially those sold at a penny and a penny-halfpenny, has slightly diminished. During last year the individual consumption per head of tobacco in France was exactly 1 kilogramme, of which 122 grammes represented snuff and 878 grammes tobacco for smoking or chewing. The total sum expended in France upon the consumption of tobacco was nearly half a milliard (i.e., 500 million francs), or 12 francs 66 centimes per head. Of this sum the Treasury gains 92 per cent.

April 6th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Tuberculosis and Pregnancy.

AT a recent meeting of the Berlin Society for Internal Medicine Professor Bumm read a paper on the management of pregnancy in tuberculous women. It was generally acknowledged, he said, that tuberculous disease was aggravated by pregnancy because the disturbances of metabolism incidental to pregnancy rendered the organism less resistant to the specific bacillus. Pre-existing pulmonary tuberculosis therefore tended to make more rapid progress, whilst women having a predisposition to tuberculosis were exceptionally liable to develop the symptoms of it during pregnancy. Tuberculous women ought, therefore, not to marry, or if married they ought not to become pregnant, but as advice to this effect was likely to remain a counsel of perfection it became advisable in such cases to terminate pregnancy by the induction of abortion. The indications for this proceeding have lately become more and more extended, and Professor Bumm, who is the chief of the lying-in department of the Charité Hospital, stated that nearly every week tuberculous pregnant women were sent to him from the medical departments of hospitals, from sanatoriums, and by medical practitioners for the purpose of having abortion induced. This course should, however, be taken only when objective symptoms of tuberculosis were present, for mere suspicion of the existence of the disease based on family history was not a sufficient justification for it. In the late stage of tuberculosis the operation should be avoided as the fatal issue was not only not postponed but might even be hastened by the loss of blood and shock. When pregnancy had advanced beyond the fourth month artificial abortion was quite as exhausting as a normal labour and should therefore be resorted to only in cases of acute laryngeal or pulmonary œdema. Mild cases of tuberculosis, in which the patient's state had become aggravated during the first half of pregnancy, were well suited for the operation, especially when the ophthalmo-reaction was negative notwithstanding the existence of obvious tuberculosis; it has been found that the ophthalmo-reaction reappeared after the occurrence of abortion. The operation should be performed in such a manner that the women do not feel pain and recover quickly, leaving their beds very soon.

Proposed Amalgamation of Berlin Medical Societies.

The Berlin Medical Society has decided to build a house of its own to be called Virchow-Haus. The meetings of the society have hitherto taken place in Langenbeck-Haus, the property of the German Surgical Association which meets only once a year for a period of four days and does not use its premises during the remainder of the year. The necessity of a special home for the Berlin Medical Society is therefore not very obvious. As the funds of this society are not large enough for the expenses of new premises it has been suggested that the other medical societies should join the Berlin Medical Society. The separation of these societies has been for a long time regarded as a drawback. Not less than 68 medical societies have been formed in Berlin and its suburbs, and the majority of the Berlin medical men are members of several of these societies. It has therefore been proposed that the various societies should be amalgamated so that they would form sections of the Berlin Medical Society. The latter would then be the centre where subjects of general interest would be discussed, whilst those of special interest would be left to the sections. If this plan were realised the funds for erecting a special building for the Berlin Medical Society would soon be collected and the house itself would certainly be more useful than if occupied by only one society.

Foreign Body in the Œsophagus.

Professor Hildebrandt showed at a meeting of the Society for Internal Medicine a woman who in January, 1907, had during sleep swallowed a set of artificial teeth. The taking of food became very difficult and she finally was in a state of inanition when in November, 1907, it was found by radiography that the foreign body was situated in the œsophagus just above the cardia. Professor Hildebrandt performed gastrotomy and tried to seize the teeth by forceps passed through the gastric wound. As he, however, did not succeed in this he performed œsophagotomy in the neck, and having introduced large forceps he crushed the foreign body into pieces which were then gradually extracted. Great exertion was necessary to get the pieces out of the œsophagus, and the operation was the more dangerous because the walls of the œsophagus were so thin that when the hand was introduced into it through the gastric opening the pulsation of the heart could be felt. The wound in the œsophagus was then closed by sutures but an opening was left in the stomach through which the patient was fed for some time. Empyema and partial gangrene of the lung occurred afterwards, but the patient, nevertheless, completely recovered.

April 6th.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

A Health Bureau for the Schools.

WITH a view to safeguard children against the spread of disease and at the same time to improve the sanitation of houses in the congested quarters of the city, the Board of Education of Budapest is planning the establishment of a bureau of health. Many of the trustees heartily favour the scheme and if enough votes can be secured in the board it will be put to a practical test as soon as the public schools are opened for the full term. The plan is to have the schools visited by medical inspectors who will obtain from the children information as to cases of illness in their homes. The houses in question will then be visited and every effort will be made to guard against the spread of disease and also to improve the existing sanitary conditions. Teachers will be requested to report to the bureau all cases of illness among the pupils and also all houses which they have reason to know are not sanitary.

Leprosy in Bosnia.

Leprosy is said to be on the increase in Bosnia. Till the year 1895 no special precautions were taken with regard to this disease as it was not considered to be contagious. Since that time, however, so many cases have been discovered that the authorities became alarmed and the rebuilding of an ancient "mosche" (temple) at Visegrad on the sea shore for the internment of lepers was resolved on. From the Serajevo Hospital, which has a special building for the reception of leprous patients, it has been recently reported that the prevalence of the disease has greatly decreased in the districts in which Austrians and Hungarians have settled in great numbers.

Spinal Anæsthesia.

At a recent meeting of the Naqyvárad Medical Society Dr. Imre Fischer, surgeon to the Jewish Hospital, read a paper on Spinal Anæsthesia. He said that the objections which were usually made to the use of spinal cocainisation were as follows: (1) that unpleasant after-effects resulted; (2) that there were immediate and remote dangers which were considerable; (3) that cocaine was uncertain in its

action, both as to producing surgical analgesia and also as to the duration of the analgesia; and (4) that attempts at introducing cocaine sometimes failed. In all of Dr. Fischer's cases the technique of the injections was similar to that adopted by most continental surgeons. The steps were as follows: 1. A preliminary hypodermic injection of one centigramme of morphine was administered. 2. Careful preparation of the lumbar portion of the patient's back was carried out over an area extending as far as the middle of the crest of the ilium. The patient should be in the sitting posture if possible, with the body bent forward in the cyclist's "scorching position." The fourth lumbar spine was then found by drawing a line from the highest point of one iliac crest to the same point on the opposite side. 5. The needle was introduced just below and to one side of the tip of the fourth lumbar spine and was directed upward, forward, and toward the median line for a distance of between 2 and 3½ inches. When the membranes were penetrated a distinct diminution of resistance was noticed. The spinal fluid usually began to drip from the needle as soon as it entered the spinal canal. At first it might be blood-stained but it soon became clear. If after reaching the canal no fluid escaped its flow might be hastened by inducing the patient to cough. A stylet might be passed into the needle to remove any obstruction that might be present.

The Preservation of Milk with Hydrogen Peroxide.

Most methods of rendering milk sterile are objectionable since they require the addition of substances injurious to health or else render the milk less digestible. It has, however, been found that if peroxide of hydrogen is added in the proportion of 0·40 part per 1000 the milk will keep for many days and the number of germs present will actually decrease to a very low number. When pathogenic germs, such as those of enteric fever, cholera, dysentery, or tuberculosis, were added to the milk they could not after the lapse of some time be detected by the most searching bacteriological examination. The taste of the milk is in no wise altered and numerous experiments have shown that the digestibility is the same as before.

An Epidemic of Typhus Fever in Budapest.

Typhus fever has made its appearance in some districts of Budapest. In the space of a very short time more than 100 cases occurred, and so rapid has been its spread that some public buildings have had to be closed. The source of the epidemic has been discovered and measures have been taken to suppress it.

March 28th.

NOTES FROM CHINA.

(FROM OUR OWN CORRESPONDENT.)

Appendicitis in China.

IN the course of an inquiry which I have recently undertaken into the incidence of appendicitis in China I was impressed with the general agreement among medical men practising in all parts of the Empire as to its extreme rarity. Medical men in charge of native hospitals dealing with large numbers of patients yearly speak of it as a disease which they almost never meet with. The only hospitals yielding any returns of it are those which treat foreign patients. The inquiry could not elicit any definite consensus of opinion as to the cause of the universal freedom of the Chinese. Observers at home seem inclined, for the most part, to attribute the cause to a faulty dietary system but a different view is required here. Sir Frederick Treves in his "System of Surgery" says, as regards the apparent exciting causes: "Among the most common may be mentioned dyspepsia, the want of efficient masticating teeth, the bolting of food, the eating of indigestible food such as nuts, constipation, diarrhœa, injury to the groin region, excessive exertion, exposure to cold." These points are the commonest features of Chinese life. Dr. John MacGowan of Amoy, who has lived during many years in China, in a recent article in the local press wrote, without reference to appendicitis: "Foreign physicians who have opened hospitals and treated large numbers of those who have consulted them have come to the conclusion that the large majority of the population are below par and are suffering from indigestion. Salted turnip, which is a popular condiment persistently eaten through all the months of the year, is very responsible for this latter ailment. But it is cheap and so the evil has got to be endured. It would be an interesting question to discuss what effect this general and widespread indigestion has upon the character of the people and upon the course of their history." Dr. MacGowan speaks of the Southern Chinese but his experience is borne out by Mr. D. Christie of Mukden in Manchuria, who after 25 years among the Chinese of the North, writing independently, says: "If dyspepsia, indigestible food, and bolting without masticating have any share in the causation of appendicitis, we should have plenty of it here." Dental caries is common among all classes. Dr. P. B. Cousland, of the London Missionary Society, says: "For 20 years I had charge of hospitals and dispensaries in the Swatow district, the beds in the former ranging from 60 to 180. I never operated on a case of appendicitis nor saw any of my colleagues do so." His experience is similar to that of the majority of practitioners in China and, taken in conjunction with the observations of Dr. MacGowan and Mr. Christie, seems to point to the incidence of appendicitis as being one of anatomical peculiarity, as, for example, the racial possession of a longer mesentery than is the case among Anglo-Saxons, when, owing to the natural shortness of the mesentery, the appendix is liable to kink and to twist. Two outstanding features of the Chinest dietary as compared with ours are the smaller amount of sugar consumed per head and the general absence of tinned foods. Meat is very rarely indulged in by the poor and agricultural classes, though it is eaten daily by the middle and upper classes who, nevertheless, eat much less of it than do Europeans. Rice is the main article of food and is prepared in two ways—either quite dry, with all the grains separated from each other, or in the form of a watery sweetened compound called "congee" by Europeans. This latter form is usually reserved for times of sickness. Coffee is never taken and the tea in use is a much milder infusion than would find favour at home. The ban on human dissection by the Government and on post-mortem examinations by relatives leaves me unable to speak at present with any definiteness on the possible anatomical solution of the question so far as Chinese immunity is concerned, but just as the physical features of Chinese faces differ invariably from those of Europeans the analogy might reasonably be inferred as to difference in the anatomical features and relationships of a Chinese appendix, thus rendering it less prone to inflammatory attacks.

Shanghai and the Opium Question.

There has been a good deal of feeling in Shanghai, with regard to the suppression of the opium trade, as to the attitude of some people at home and the late questions in the House of Commons on the subject. The British Government is doing all in its power to reduce the English trade—only harm can result from a too rigid insistence on its immediate and total suppression. It should not be forgotten by philanthropists at home that the whole practical question of suppression is fraught with much difficulty. The Shanghai municipal council is being asked to adopt the unconstitutional procedure of arbitrarily closing the opium shops in the middle of the financial year, without reference to the body of ratepayers. Though it is willing to do all in its power to abolish these places it is not easy to adjust quickly a total loss of over £7000 per annum from licences alone. It has been suggested that the Anti-Opium League in China in return for the support which it has received from the Member for Nottingham East and others, might memorialise the Home Secretary to introduce total prohibition of alcohol in Nottinghamshire. Correspondents from various parts of the Empire, in writing to the Shanghai papers, point out the increasing use of morphine injected hypodermically, and I have recently come across a case of a Chinese who takes one drachm of morphine a day by this method. Not infrequently cases come to hospital with their bodies dotted all over with the prick marks of injection needles. Perhaps the worst feature connected with the suppression question is the crop of opium "cures" which have sprung up—most of them prepared by foreign druggists and nearly all containing morphine as the chief ingredient. A Chinese trying to fight the craving for opium by means of these "cures" would become a hopeless victim to the morphine habit. While I am, of course, entirely in sympathy with any movement in favour of the eradication of the opium habit, I would urge those members of our profession at home who may be called upon to express their opinion about it to deprecate any undue haste on the part of

members of the Anti-Opium League, especially those who have no knowledge of local conditions. The Asiatic temperament must be taken into account and requires very careful treatment in matters of such importance as the regulating of an appetite for a mental excitant such as opium. The pleasant sensations that follow a morphine injection are not likely to remain long a secret to those who, having been rudely divorced from their habitual use of opium, are searching about for some means of satisfying the almost irresistible craving which their systems feel for it.

March 10th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Kew Lunatic Asylum.

THE Government of Victoria has decided that the Kew Asylum grounds shall be sold and the asylum eventually removed. The present building has been long condemned by the official visitors as overcrowded and structurally deficient. A site has been purchased at Heidelberg which is a very picturesque suburb about eight miles from Melbourne. The present building will be retained for benevolent cases until other provision is made.

The Site of the Melbourne Hospital.

The question of a suitable site for rebuilding the Melbourne Hospital continues to be a fruitful topic of controversy. The choice was considered to lie between rebuilding on the present site or moving to what is known as the "pig market"—a larger area about a mile farther from the city. The Premier recently introduced a new factor by offering the hospital committee an area of 15 acres in what is at present a reserve surrounding the Government House set apart for the Governor-General since the inauguration of the Commonwealth. This site is ideal from the standpoint of natural beauty but it is situated on the south side of the river Yarra and would have three other general hospitals within a radius of one and a half miles. It is objected that if the present site is abandoned the new hospital should be moved to the north, as the northern suburbs contain the great bulk of the poorer population. Another objection which has been strenuously urged is that the Government House reserve should be retained for a pleasure ground. The medical staff of the hospital decided some time ago by a substantial majority in favour of the "pig-market" site, but on the Premier's offer being made a number altered their view and a majority is now in favour of moving across the river. The popular objection to this course appears to be so strong, however, that it is possible that the offer may be withdrawn. Meanwhile the hospital committee accepted it subject to the agreement of the Wilson Fund trustees, whose gift of £100,000 carries the right of approval. This approval was withheld and the Premier called a conference of various public bodies interested in the question. No result was arrived at by this meeting and it is now announced that the hospital committee will itself come to a definite conclusion. Had this been done at the outset a great deal of time and discussion would have been saved, for public opinion was prepared to support the committee in anything decided upon until it weakly accepted the suggestion to cross the river.

Mortality among Boarded-out Infants.

During the recent heat wave in Melbourne it was reported by a female inspector that several infants in the care of a registered nurse were in a dying condition. They were removed to the depôt for neglected children and five of them died there within a week, while another succumbed a few days later. The cause of death in each case was given as colitis or entero-colitis. The nurse in question had no fewer than 12 children under her care. The police inspector reported favourably on his knowledge of the conduct of this place and the coroner eventually concluded that there was no evidence for committal and intimated that the authorities might take further action. The Chief Secretary has directed a prosecution.

Municipal Dispensaries for Sydney.

A movement has been made in the city council of Sydney to establish municipal dispensaries. A motion was carried instructing the city solicitor to prepare a clause in the next amending Bill giving the council power to establish dispensaries in the city.

The University of Sydney.

The medical school is expanding so greatly that it has been found necessary to remodel the present school and also to make considerable additions to the building. The new wing will consist of a stone building three storeys in height, the exterior of which will correspond with the existing block, and the cost will be £20,000. The school as rebuilt will be connected by a handsome cloister with the Pathological Museum. On the ground floor of the new wing there will be a bacteriological class-room, laboratory, and preparation-room, with a lecture-room for pathology. The first floor will include class-rooms for materia medica and surgery. A new museum of anatomy will also be provided.

A Remarkable Case.

A curious case of mental aberration from overstrain has occurred in one of the suburbs of Melbourne. An old lady, aged 81 years, had been for some two years entirely bedridden. She was nursed by a daughter, a woman aged 53 years, and mother and daughter were so attached that neither would permit any other attendant, although such was available. A neighbour noticing an offensive smell communicated with the police, who discovered that the old lady had been dead for more than a week. The daughter was in a dazed condition and could give no account of the occurrence except the statement that she thought her mother was asleep. Relatives had called at the house three or four days previously and had been informed that the patient was sleeping and was not to be disturbed. When visited by the police the daughter had apparently not taken her clothes off for at least three days, nor was there any evidence that she had partaken of any food during that time. She has since entirely recovered her mental balance.

Vital Statistics.

The estimated population of Sydney district on Dec. 31st, 1907, was 550,600. The birth-rate for the year was equal to 26·32 per 1000 of the population, which is the highest rate recorded for many years. 10·1 per cent. of these births were illegitimate. The death-rate was 11·45 per 1000; the infant mortality rate was 96·3 per 1000 births. The death-rate was unusually high among children, which is accounted for by the effect of a dry season and the prevalence of epidemic whooping-cough.

The Danysz Microbe.

A conference of the chairmen of State boards of public health was held in Sydney to consider the advisability or otherwise of permitting the liberation of the Danysz rabbit microbe on the mainland. The conference consisted of Dr. Frank Tidswell of New South Wales; Dr. W. P. Norris, Victoria; Dr. W. Ramsay Smith, South Australia; Dr. J. S. C. Elkington, Tasmania; and Dr. Lovegrove, Western Australia. The questions referred for consideration were: (1) whether the microbe found amongst rabbits on the mainland is identical with that suggested by Dr. Danysz for the destruction of rabbits; and (2) whether it is advisable to continue the experiments in the mainland with the Danysz microbe. With regard to the first question the conference concluded "that the microbe suggested by Dr. Danysz is specifically identical with the microbes isolated from rabbits captured on the mainland of Australia." As to the second query the conference concluded that under natural conditions the virus would not injuriously affect animals other than rabbits failing the influence of some circumstances at present unforeseen. After having considered all the evidence the conference found that while there was no reason to apprehend injury to animal life in general neither was there any reason to expect any effective destruction of rabbits by the use of the virus. The importation of the virus being now prohibited by Commonwealth law the conference recommended that the prohibition should be maintained. This means that the Government will not undertake any further experiments, nor will it permit private persons to do so. The scheme may practically be regarded as defunct.

Sydney Hospital.

The annual meeting of subscribers to the Sydney Hospital was held on Feb. 18th under the presidency of Sir Harry Rawson, the State Governor. The past year was the most active and progressive in the history of the institution. 4935 in-patients were treated, of whom 376 died; the proportion of deaths, after deducting those occurring within 24 hours after admission, was 5·7 per cent. 2245 operations were

performed at Sydney and 520 at the Moorcliff branch. The finances are more satisfactory. The present Government paid a subsidy of £35 per bed on 295 beds. The total expenditure was £24,812, while the income amounted to £21,909. The cost per bed was £73 11s. 6d. A new wing was completed at a cost of £23,000.

March 4th.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At the first professional examination held on March 23rd, 24th, 25th, 26th, 27th, 28th, and 30th, the following gentlemen were approved in the subjects indicated:—

Chemistry and Physics.—William Somerset Birch, King's College; Kenneth Bleckly Clarke and John Stanley Cocks, Guy's Hospital; William Dale, Birkbeck College; John Rhys Davies, University College, Cardiff; Alfred Evan Lewis Devonald, King's College; William Kelsey Fry, Wandsworth Technical Institute; Harold Stanley Groves, Guy's Hospital; William Samuel Hazell, University College, Cardiff; Hugh Granville Hockridge, St. Bartholomew's Hospital; Edmund Basil Jardine, University College; Evan Lawrence Jones and Kenneth John Taylor Keer, Guy's Hospital; Gordon Burnham King, University College; Allan Osborne Knight, Middlesex Hospital; Edmund Thomas Howard Lea, Westminster and King's College Hospitals; Edward MacMahon Mahon, Guy's Hospital; Reginald Victor Martin, St. Mary's Hospital; Charles Harold Medlock, Guy's Hospital; John Millard, Intermediate County School, Towyn, and Birmingham University; Alan Vivian Moberly and Montague Pern, Guy's Hospital; D'Arcy Power, St. Bartholomew's Hospital; Walter Alexander Reynolds, St. Mary's Hospital; John William Thomas, Leeds University; Watkin Watkins, University College, Cardiff; Hamlet Mark Whelan, University College, Cardiff; John Herbert Wiles, Polytechnic Institute; and Leslie Douglas Wright, Guy's Hospital.

Chemistry.—Harold Cane Godding, Guy's Hospital; James Stanley Higgs, St. George's and King's College Hospitals; Samuel Hutchinson, University College; George Gerald Jack, Technical Institute, Wandsworth; Hubert Dennis Shore, Guy's Hospital; and Henry Stanley Young, Birkbeck College and St. Thomas's Hospital.

Physics.—Alfred Beuthin Danby, Guy's Hospital; John Baptist Gregory Dotto, St. Bartholomew's Hospital; Frank Mainwaring Hughes, London Hospital; Guy Algernon Pratt, Guy's Hospital; Marcus Holroyd Ratton, Guy's Hospital and Birkbeck College; Walter Graham Reynolds, St. Mary's Hospital; Anthony Wellesley Monckton Sawyer, University College; Abdel Khalek Selim, Guy's Hospital; Harold Tuxford, Middlesex Hospital; and William Cuthbert Whitworth, Guy's Hospital.

Biology.—Charles Beresford Alexander, Liverpool University; Edgar Bernard Argles, St. Mary's Hospital; Stephen Leonard Baker, London Hospital; Hugh Woodward Barnes, King College; Cyril Armand Bernard, Liverpool University; Henry Cecil Billings, London Hospital; William Herbert Blakemore, Manchester University; Thomas Pennington Bremner, Liverpool University; Bertram James Brewitt and Roger Orme Bridgman, St. Bartholomew's Hospital; William Hackett Broughton, Manchester University; Charles Grinling Bunn, B.A. Cantab., Cambridge University and Charing Cross Hospital; Charles Frank Barton, London Hospital; Guy Kenneth Butterworth, St. Mary's Hospital; Alfred Fisher Camp, University College, Reading; Kenneth Bleckly Clarke, Guy's Hospital; Henry Dyer Scott Close, St. Thomas's Hospital; Alfred Beuthin Danby, Guy's Hospital; John Rhys Davies, University College, Cardiff; Eustace Gregory Edward Eilman, St. Mary's Hospital; Frank Rex Fletcher, London Hospital; Victor William Russell Forbes, Charing Cross Hospital; Edward Dance Fountain, St. Mary's Hospital; Frank Cane Godding, Guy's Hospital; Samuel Sowray Greaves, Leeds University; Francis Henry Guppy, St. Bartholomew's Hospital; Owen Gwatkin, Manchester University; William Samuel Hazell, University College, Cardiff; Shai Kwong Ho, St. Thomas's Hospital; Henry Sydney Colchester Hooper, London Hospital; William Edward Ison, St. Bartholomew's Hospital; Thomas Henry Jackson, Charing Cross Hospital; Edmund Basil Jardine, University College; Evan Lawrence Jones, Guy's Hospital; Ralph Jones, Charing Cross Hospital; William Ben Glynn Jones, Liverpool University; Gordon Burnham King, University College; Claude Kingston, University College, Bristol; Allan Osborne Knight, Middlesex Hospital; John Llewellyn David Lewis, Guy's Hospital; Farquhar MacGillivray Loughnane, St. Thomas's Hospital; Josiah Sherlock Marrington Arthur Haigh Lyne-Evans, St. George's and University College Hospitals; William Fidler Mason, Leeds University; Percy Uvedale Mawer, St. Bartholomew's Hospital; Owen Colville Morphy, Middlesex Hospital; Lionel Everard Napier, St. Bartholomew's Hospital; Henry Barton Owens, Robert Charles Parry, and Henry Ray Parsloe, London Hospital; John Rowland Payne, University College, Cardiff; Leonard Robert Pickett, Tonbridge School; Oswald Pitt, Manchester University; Stanley Owen Rashbrook, London Hospital; Geoffrey Bower Richardson, St. Bartholomew's Hospital; Joseph Edward Rivers, Manchester University; Alexander Elder Saunderson, Liverpool University; Anthony Wellesley Moncaton Sawyer, University College; Bernard Edward Patrick Sayers, Middlesex Hospital; Frederic Simpson, Charing Cross Hospital; Lindsay Clive Smith, London Hospital; Thomas Joseph Taunton, Technical School, Brighton; Arnold Bothwell Taylor, Manchester University; Harold Topham, Leeds University; Arnold Viney, St. Thomas's Hospital; Clement Arthur Webster, Manchester University; Leslie Gordon White, Leeds University; and Stanley Wickenden, Guy's Hospital.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At the Preliminary Science Examination for the Licence in Dental Surgery of the Royal College of Surgeons of England the following candidates were approved in the subjects indicated:—

Chemistry and Physics.—Richard Guy Ash, Charing Cross Hospital; Stanley Samuel Beare, Middlesex Hospital; John Benson, Merchant Venturers' Technical College, Bristol; Walter Sydney Bevis, Portsmouth Grammar School; Oscar Bullock, Municipal Technical College, Brighton; Reginald Northey Curnow, Birkbeck College; Cecil Lucas Donne, Middlesex Hospital; Reginald Gilbert Farrington, Guy's Hospital; Robert Daniel Gregg, Liverpool University; William Ewart Hallinan, University College, Cardiff; Albert Henry Herbert, Birmingham University; Kenneth George Hoby, Guy's Hospital; Ernest Sharman Huckett, Portsmouth Grammar School; George Dennis Iles, Leeds Technical Institute; William Lowe Jackson, Charing Cross Hospital; Frederic Amos Jaques, Guy's Hospital; Percy Hills Orton, Guy's Hospital; Arthur Hugh Spencer Palmer, Merchant Venturers' Technical College, Bristol; Haydn Peters, Technical College, Swansea; Reginald Wood Powell, Guy's Hospital; John Hampden Ross, Royal Albert Memorial College, Exeter; Edward Bernard Ryley, Municipal Technical School, Hull; Isidore Gittleson Samuels, Royal Albert Memorial College, Exeter; Reginald Alfred Slade, University College, Bristol; and Basil William Tyson, University College, Cardiff.

Chemistry.—Harold Barrett, Birkbeck College; Arnold John Chapman, Birkbeck College; John Eric Rhys Evans, Municipal Technical College, Brighton; Thomas Leonard Fiddick, Guy's Hospital; John Knowles, Charing Cross Hospital; Ronald Victor Payton, Municipal Technical School, Birmingham; William Macqueen Potter, Birkbeck College; Frederick Gordon Pulford, Charing Cross Hospital; Wilfrid Aubrey Rowe, Charing Cross Hospital; Frank Percival Sturdee, Northern Polytechnic Institute, Holloway; Samuel Lloyd Wallis, Wandsworth Technical Institute; and Edgar Olyve Yerbury, South-Western Polytechnic Institute, Chelsea.

Physics.—Kenneth Charles Brough, Birkbeck College; Graham Cotterell, Science and Art Institute, Walsall; James Kenneth Crawford, Leeds Technical Institute; Henry Oswald Dumayne, Birkbeck College; Arthur Raymond Goddard, Middlesex Hospital; Lawrance Richards Haydon, Charing Cross Hospital; James Stacey Robinson, Municipal Technical School, Birmingham; Arnold Victor Shilton, Birmingham University; and Malcolm Lloyd Williams, Science and Art Institute, Walsall.

UNIVERSITY OF LEEDS.—At examinations held recently the following candidates were successful:—

DEGREES OF M.B. AND CH.B.

Second Examination, Part I., Anatomy and Physiology.—J. P. Brown, J. B. Fisher, W. S. Hart, H. N. Ingham, H. V. Lamb, H. S. Raper, C. B. Richardson, R. A. Slocombe, G. V. Stockdale, N. S. Twist, and R. Ward.

DIPLOMA OF L.D.S.

First Professional Examination.—H. E. Bentley, G. S. McKay, and C. F. Salt.

UNIVERSITY OF DURHAM: FACULTY OF MEDICINE.—At the third examination held in March for the Degree of Bachelor in Medicine the following candidates were successful:—

Pathology, Medical Jurisprudence, Public Health, and Elementary Bacteriology.—Jabez Ethelbert Dainty (second-class honours); Wilfred Barkes, John Akilade Canicrick, and Harold Alexander Cooper, College of Medicine, Newcastle-upon-Tyne; Henry Frederick Hlewicz, London Hospital; Charles Marks, College of Medicine, Newcastle-upon-Tyne; Theresa de Gournay Miller, London School of Medicine for Women; and Joseph Albert Sacco, William Sacco, Robert Henry Smallwood, William Robert Elstob Unthank, Charles Leslie Wigan, and George Huntly Wood, College of Medicine, Newcastle-upon-Tyne.

UNIVERSITY OF GLASGOW.—The following have passed the First Professional Examination for the degrees of M.B. and Ch.B. in the subjects indicated (B., Botany; Z., Zoology; P., Physics; C., Chemistry):—

Mark James Aitken (B., P.), James Angus (B., P.), Robert Richmond Archibald, M.A. (B.), Charles Averill (Z.), Robert Brown Bain (P.), Alexander Baird (B., Z.), Johannes Gerhardus Becker (Z., C.), Simon Harry Bloom (P.), Samuel Blumenfeld (Z., C.), Adam Brown (Z., C.), Robert Archibald Brown (P.), William Brown (Z., C.), John Scouler Buchanan (Z.), Edmund Tytler Burke (Z., C.), Norman Cameron (B., C.), John Campbell (P.), John MacDougall Clark (P., C.), George Cochrane (B.), Robert Corbett Corbett (Z.), Daniel Augustine Cush (B., Z.), George Dalziel (B., P.), Alexander Hugh Davidson (Z., P., C.), William Tennent Gairdner Davidson (Z., C.), James Henry Dibb (Z., C.), William Beatson Drummond (Z., C.), Joseph Dunbar (Z., C.), Robert Findlay (Z., C.), John Maitland Forsyth (C.), William Forsyth (Z., C.), William Fraser (Z.), John Erskine Fyfe (Z., C.), Leander Lowrie Fyfe (P.), John Joseph Gibb (B., P.), Alexander Muir Gibson (Z., C.), Alexander Glen (Z., C.), Charles Hope Haddow (B., P.), John Reid Haldane (C.), James Stewart Hall (B., C.), James Hamilton (Z.), Daniel Christopher Hayes (B., Z., P.), Alexander Gibson Henderson (C.), Peter Henderson (B., Z.), John Galloway Hendry (B., Z., P.), John Wishart Welsh Hewitt (Z., C.), Thomas Pollock Inglis (Z.), Andries Johannes Joubert (Z., C.), Charles Joseph Kirk (C.), Robert Patrick Archibald Kirkland (Z., C.), Johannes Arnoldus Kruger (C.), William Joseph Brown Lavery (Z., C.), Frank Lawrie (Z.), Norman Veitch Lothian (Z., C.), John Aloysius M'Connochie (Z., C.), John Fergusson M'Creath (Z., C.), James Ronald M'Curdie (Z., C.), Norman

M'Farlane (Z., C.), Charles Aloysius M'Guire (Z., C.), James Graeme M'Kinna (Z., C.), Charles Mackinnon (B., Z., P., C.), Guy Dalzell M'Lean (Z.), John Malcolm Macpherson (Z., C.), Thomas Martin (Z., C.), Osborne Henry Mavor (Z.), William Montgomery (Z.), Neil Morison (P.), Andrew Muir (B.), Michael Murphy (B., P., C.), Andrew Shennan Neilson (B., Z., P.), John Boyd Orr, M.A. (Z., C.), James Purdie (Z., C.), John Clark Pyper (Z., C.), James Francis Quigley (Lambhill), (Z., C.), James Francis Quigley (Rutherglen), (B., P.), Hugh Young Riddell (P.), Edwin Robertson (Z., C.), James Hinton Robertson (Z., C.), James Inglis Robertson (Z.), Samuel Rutherford (B., Z., C.), Frank Shearar (Z.), Neil Islay Sinclair (B.), John Finlayson M'Gill Sloan (Z., C.), Hendrik Cornelius van der Watt Smit (Z., C.), James Smith (B., Z.), Alexander Robert Boag Soga (Z., C.), Roderick Alexander Steven (B.), Lawrence Tweedie Stewart (B., Z.), Ronald Stewart (Z., C.), William Patrick Andrews Stewart (Z., P.), Archibald Hugh Taylor (Z., C.), William Taylor (Z., C.), John Cameron Thomson Teggart (Z., C.), Ernest Graham Young Thom, M.A. (Z., C.), Edward Napier Thomson (C.), Tom Waterhouse (C.), George Milroy Whish (Z., C.), William Herbert Nairne White (B.), William Whitelaw (B., Z., P., C.), William Brockie Wilson (Z., C.), William Long Wilson (B., P.), William Ferguson Wood (C.), Walter Percy Yates (B., P.), and Fergus Hay Young, M.A. (C.).

Women.—Janet Rankine Anderson (Z., C.), Agnes Barr Acuhencloss (P.), Muriel May Curtis (B., C.), Jane Malcolm Davidson (Z., C.), Jane Kerry M'Elroy Hunter (Z., C.), Maggie Logan Kirkwood (Z., C.), Barbara Macgregor (P.), Janet Morrison M'Kechnie (Z., C.), Ellen Brown Orr (B., Z.), Isabel Jane Stark (P., C.), Petrina Stewart (Z.), Mary Buchanan Thomson (P.), and Margaret Walker (B., P.).

The following have passed the Second Professional Examination for the degrees of M.B. and Ch.B. in the subjects indicated (A., Anatomy; P., Physiology; M., Materia Medica and Therapeutics):—

Thomas Adam, M.A. (P., M.), David Rutherford Adams (A., M.), Andrew Clark Anderson (P., M.), Donald Arbuckle (A., M.), James Currie Auchencloss (A.), Charles Auld (A., P.), Robert Blackie Austin (P., M.), John Bruce Baird, B.Sc., (A., P., M.), Charles Stewart Black (M.), John Broadfoot (A., P., M.), Alexander Hogg Brown (M.), James Buchanan (A., P., M.), James Alexander Stewart Burges (P., M.), Thomas Simpson Campbell (A., P., M.), William George Clark (A., P., M.), Robert Hunter Deans (A., P.), James Thomson Dick (A., P.), Donald Downie (P., M.), Peter Drummond (P., M.), Robert Drummond (A., P., M.), Alexander Moffat Dunlop (M.), James Dunlop, M.A. (A., P.), William Deanburn Dunlop (A., P.), Andrew Scobie Findlay (A., P., M.), Nicholas Gebbie (A., P., M.), Robert Gilchrist (A., P., M.), Joseph Graham (A., P.), John Gray (A.), Albert William Gregorson (A.), Archibald Campbell Haddow (A., P., M.), George Haddow (P.), Allan Byars Hamilton (P.), James Jack (A., P., M.), Thomas Joseph Kirk (M.), Alexander Leishmann (M.), James Macallan (P., M.), Donald Christopher Macdonald (A., P., M.), Ian Macdonald (A., P.), Malcolm Angus MacDonald (A., P., M.), William Macewen (A., P.), Alastair Macintyre (A., P., M.), Balfour M'Kean (A., P., M.), John Gladstone Mackenzie (P., M.), Thomas Jones Mackie (A., P.), William Maxwell M'Kie (M.), Murdo Mackinnon (P., M.), Andrew Bruce MacLean (A., P.), William Alexander Maclennan (A.), Archibald M'Leod (P., M.), Murdoch Hugh M'Leod (M.), Alexander Thomas M'Whirter (A., P.), Francis William Martin (M.), Angus Millar (A.), Campbell Lamont Miller, M.A. (A., P., M.), Robert Stewart Miller (P.), John Mitchell (P., M.), John M'Intosh Morgan (M.), John Mowat (A.), Andrew Ross Muir (A., P., M.), Clark Nicholson, M.A. (M.), John Paterson (P., M.), Thomas Paterson (P.), Richard Reid Kirkwood Paton (P., M.), John Penman (A., P., M.), Arthur Poole (P.), Arthur Stanley Richmond (P.), Daniel Wright Ritchie (A., P., M.), Robert Charles Robertson (A., P., M.), John Ivison Russell (A., P.), Joseph Henry Napoleon Felix Savy (A., P.), James M'Alpine Scott, M.A. (A., P., M.), John M'Naught Scott, M.A. (A., P., M.), James David Speid Sinclair (A.), William Sneddon (M.), George Rae Spence (P., M.), Richmond Steel (A.), Edward Ernest Stewart (A.), John Stewart (A., P., M.), Thomas Louis Grenet Stewart (P., M.), Gilbert Innes Strachan (A., P., M.), Andrew Edgar Struthers (P., M.), William Oswald Taylor (A., P., M.), Stephen Veitch Telfer (A., P., M.), Harold Edward Whittingham (A., P., M.), James Williamson (Holytown) (M.), George Jackson Wilson (A., M.), and Henry Yellowlees (P., M.).

Women.—Christina Barrowman (M.), Louisa Emma Dodge (P.), Florence Ann Gallagher (P., M.), Honoria Somerville Keer (M.), Agnes Mary M'Michael (A., P., M.), Jeanie Douglas M'Whirter, M.A. (M.), Margaret Muir (M.), Mary Amelia Pilliet (A., P., M.), Florence Elizabeth Sexton (A., P., M.), and Jemima Wallace (A.).

The following have passed the Third Professional Examination for the degrees of M.B. and Ch.B. in the subjects indicated (P., Pathology; M., Medical Jurisprudence and Public Health):—

Archibald Aitchison (M.), William Shanks Alexander, M.A. (P., M.), John Allan (P., M.), James George Anderson (P., M.), William Anderson (P.), William Hunter Stirling Armstrong (M.), Alexander Ballantyne, M.A. (P.), David Barbour (P.), Edgar Barnes, M.A. (M.), Arthur Munby Bayne (P.), Douglas Morris Borland (P.), Morris William Browdy (P., M.), David Young Buchanan (P., M.), Carl Joseph Barrett Buchheim (P., M.), John Adam Gib Burton (P., M.), James Cairns (P., M.), John Cameron (P.), Andrew Hood Clark (P., M.), Alexander Beck Cluckie (P.), James Lang Cochrane (P., M.), Charles Duguid, M.A. (P., M.), James Kirkwood Dunlop, M.A. (P., M.), Donald Fisher (P.), Thomas Loudon Fleming (P.), Thomas Scott Forrest (P.), William Leonard Forsyth (M.), Robert Gale (P., M.), William Ernest Gemmell (P.), Alexander Gordon Gilchrist (P., M.), Robert Dunlop Goldie (P., M.), George Stevenson Gordon (P., M.), Alexander Thomas Arthur Gourlay (P.), Edward O'Driscoll Graham (M.), John Granger (P., M.), Kenneth Charles Gordon Gray (P., M.), John M'Lean Hendry (M.), William Howie (P.), Bentley Moore Hunter (P., M.), James Walker Jones (P.), John Pariane Kinloch (P., M.), David Neilson Knox (P., M.), William Thomson Lindsay (P., M.), William M'Adam, M.A., B.Sc. (P.), Daniel Conway M'Ardle (M.), William Charles Macartney (M.), Robert M'Carlie (M.), William M'Connell (P., M.), Alexander Macphail Macdonald (P.), Donald M'Intyre (P., M.), Robert Buchanan Forbes M'Kail (P., M.), George Macleod, M.A. (P., M.) Campbell Macmillan (P., M.), John William M'Nee (P.), John Hart M'Nicol (P., M.), Allan M'Pherson (P.), Murdo Mackenzie MacRae (M.), Thomas Marlin (P., M.), William Aubrey Layard Marriott (P., M.), Hyacinth Bernard Wencesiaus Morgan (P.), Findlay Murchie (M.), Frederick Lewis Napier (P.), William Niccol (P., M.), Charles Mill Nicol (P., M.), David Purdie (P., M.), John Robertson (P., M.), Hugh George Robinson (P., M.), Alfred Roemmele (P., M.), William Rutherford (P., M.), William Wilkie Scott (M.), William Alexander Sewell (P., M.), James Johnston Sinclair (P., M.), James Stewart Somerville (P., M.), William Stevenson (P.), Alexander Stewart (P., M.), Arthur Ford Stewart (P., M.), David Campbell Suttie (P., M.), Robert Sweet (P., M.), Duncan Macnab Taylor (P.), Walter Telfer (P.), Aidan Gordon Wemyss Thomson (P.), Charles Herrman Wagner (P.), George Wallace (P., M.), James Brown Whitfield (P., M.), Henry Joseph Windsor (P., M.), John Youngson Wood (P.), David Yellowlees (P.), and Douglas Young (P., M.).

Women.—Euphemia Adamson Hay (P., M.), Mary Cochran Mitchell (P., M.), Jessie Deans Rankin (P.), Margaret Eason Robertson (P., M.), Olive Robertson (P.), Margaret Elizabeth Rutherfurd (P., M.), Jeanie Hinshaw Stewart (P.), and Ethelwyn Mary Walters (P., M.).

The following passed with distinction in the subjects indicated:—

First Examination.—In Zoology and Chemistry: Samuel Blumenfeld, Norman Veitch Lothian, James Hinton Robertson, and William Brockie Wilson. In Zoology: Janet Rankine Anderson, Charles Averill, James Henry Dible, Maggie Logan Kirkwood, James Ronald M'Curdie, Charles Aloysius M'Guire, Thomas Martin, John Boyd Orr, M.A., John Clark Pyper, William Taylor, and William Whitelaw. In Physics: John Campbell, James Francis Quigley (Rutherglen), Mary Buchanan Thomson, and Margaret Walker. In Chemistry: Robert Patrick Archibald Kirkland and George Milroy Whish.

Second Examination.—In Anatomy and Physiology: Robert Hunter Deans and Thomas Jones Mackie. In Anatomy: James Thomas Dick, Malcolm Angus MacDonald, and William Macewen. In Physiology: John Bruce Baird, B.Sc., and Harold Edward Whittingham. In Materia Medica and Therapeutics: James Buchanan.

Third Examination.—In Pathology: William M'Adam, M.A., B.Sc., George Macleod, M.A., Hyacinth Bernard Wencesiaus Morgan, and Charles Mill Nicol. In Medical Jurisprudence and Public Health: James George Anderson and David Campbell Suttie.

FOREIGN UNIVERSITY INTELLIGENCE.

Berlin: Dr. A. Albu, *privat-docent* of Medicine, and Dr. Karl Brahns, *privat-docent* of Dermatology, have been granted the title of Professor.—*Breslau:* Dr. Julius Schmidt has been recognised as *privat-docent* of Medicine.—*Florence:* Dr. Galileo Pierallini has been recognised as *privat-docent* of Pathology.—*Halle:* Dr. Max Kauffmann has been recognised as *privat-docent* of Neurology and Psychiatry.—*Naples:* Dr. Salvatore Aiello has been recognised as *privat-docent* of Neurology and Psychiatry.—*Paris:* Dr. A. Lebeau has been appointed Professor of Toxicology.—*Strasburg:* Dr. Walter Berg has been recognised as *privat-docent* of Anatomy.—*Tomsk:* Dr. Pokrovski of St. Petersburg has been appointed Professor of Pathological Anatomy.—*Turin:* Dr. Emilio Megnier has been recognised as *privat-docent* of Children's Diseases and Dr. U. Calamida as *privat-docent* of Laryngology and Otology.

RETIREMENT OF MR. J. WARD COUSINS AND MR. HENRY RUNDLE FROM THE STAFF OF THE ROYAL PORTSMOUTH HOSPITAL.

At a meeting of the governors of the Royal Portsmouth Hospital held in the board room of that institution on March 27th the resignations were accepted of Mr. Ward Cousins after 48 years' service and of Mr. H. Rundle after 34 years' service. Both gentlemen were elected honorary consulting surgeons and cordial votes of thanks were accorded to them for the valuable services which they had rendered to the hospital. As was remarked by one of the speakers, the improvements at the hospital are monuments to Mr. Cousins's zeal and interest in the institution.

HEALTH REPORT OF THE MID-WARWICKSHIRE COMBINED SANITARY DISTRICT.

The Mid-Warwickshire combined sanitary district includes Yardley (rural) in Worcestershire and Crick (rural) in Northamptonshire. In the middle of last year it possessed a total population of 161,710, having increased by 7600 in the course of the year. The greatest part of the increase has been in the Yardley district, which is distinguished also by the fact that, according to Dr. George Wilson's report, it shows the highest birth-rate for the district (26·7 per 1000) and almost the lowest death-rate (11·3 per 1000), being eclipsed in the latter respect, however, by the Rugby urban district with a death-rate of only 9·6 per 1000. The average death-rate for the whole district was 11·9 per 1000 and the average birth-rate

23·7 per 1000. The infantile death-rate, which was 109 in the preceding year, fell during the past year to 88. Dr. Wilson states that in his opinion the Notification of Births Act will have little or no beneficial effect in the rural and small urban districts, and he has not felt warranted in recommending its adoption to any of the district councils for which he acts.

NATIONAL UNION OF PUBLIC HEALTH AUTHORITIES.—A meeting of the provisional council of the above union was held on March 26th at the Grand Hotel, London, for the purpose of considering the rules of the association and the transaction of other business. The draft rules prepared by the chairman and the honorary secretary, after being carefully considered and in a few respects amended, were adopted and ordered to be submitted to a conference of the union to be held on May 28th at Caxton Hall, Westminster.

THE DEATH OF DR. HENRY COLLIER LECKY.—Mr. H. C. Lecky, M.B., B.Ch., D.P.H. Oxon., who since April, 1906, had been in charge of the Brighton bacteriological laboratory, died at the Sussex County Hospital, Brighton, on March 31st. He was only 30 years of age and since the departure from the town of Dr. Arthur Newsholme had been the acting medical officer of health. He was one of the six selected candidates for the position of medical officer of health of Brighton and his death at so early an age is exceedingly sad.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Gustav von Hüfner, professor of physiological chemistry in the University of Tübingen, aged 66 years.—Dr. Dudley D. Saunders, formerly professor of medicine and medical jurisprudence in the Memphis Hospital Medical College.—Dr. Daniel B. St. John Roosa, professor of ophthalmology and otology in the New York Post-Graduate Medical School.—Dr. I. P. Mierzéievski, formerly professor of neurology and mental diseases in the Military Medical Academy of St. Petersburg.

A MEMORIAL TO THE LATE DR. ALFRED LLOYD OWEN.—In accordance with a very general feeling that some memorial should be erected to the late Dr. Alfred Lloyd Owen, a small committee was formed to further this object. It was felt that the most fitting place in which to perpetuate his memory was within the walls of the Royal Portsmouth Hospital, in which he took the warmest interest and where his chief work of a public character was done. A tablet in alabaster with Irish green marble border has recently been placed in the main corridor of the hospital. The inscription reads—

In remembrance of
ALFRED LLOYD OWEN, B.A., M.D.
Born Aug 18th, 1845. At Rest July 4th, 1907.
Assistant Surgeon 1870–1874. Surgeon 1874–1906.
Consulting Surgeon 1906–1907
To this Hospital.
A wise Surgeon. A valued colleague.
A follower of all that is good and true.
A man of quick sympathy and high integrity,
Beloved by a wide circle of friends,
Whom he attracted by his own capacity for friendship.
Fortiter. Fideliter. Feliciter.

This tablet has been erected by his friends who knew and appreciated his good qualities.

WORCESTERSHIRE ASSOCIATION FOR THE PREVENTION OF CONSUMPTION.—The fifth annual report of the Open-air Sanatorium at Knightwick, near Worcester, has been issued by the committee. During 1907 82 cases were under treatment and the accommodation at the institution has been extended considerably. Three new double shelters and a new dining and recreation room with sliding sides have been erected. A new water-supply has been installed, comprising a river pumping station, settling tanks for 5000 gallons, and filter. The drainage has been overhauled and new electric plant installed. It is not surprising that the committee is appealing for increased support. Interesting statistics are given under the heading "Five Years' Experience," showing that of all the "early" cases treated during that period in the sanatorium 90 per cent. are in good health and 82 per cent. are at work. The medical superintendent gives a full account of the routine treatment; the Frimley plan of providing light manual work for selected patients has been employed with benefit. The superintendent states that discharged patients often find difficulty in regaining employment on account of their supposed infectivity. It is much to be regretted if the public are so over-frightened on this point as to deter patients from incurring the "brand" of having undergone sanatorium treatment.

DONATIONS TO HOSPITALS.—The result of Messrs. Raphael Tuck's Postcard Chain Competition, by which among other institutions hospitals have largely benefited, has now been announced. 50 institutions have received prizes, the first six being the Royal United Hospital, Bath (Art prize of the value of £1000); Torbay Hospital, Torquay (cheque for £250), Victoria Hospital, Frome (cheque for £100), Royal Victoria Eye and Ear Hospital, Dublin (Art prize £100), General Hospital, Chester (cheque for £50), and Great Ormond-street Hospital, London, W. (cheque for £50). The complete list of prizes can be obtained in pamphlet form from Messrs. Raphael Tuck, Moorfields, City, London.

LITERARY INTELLIGENCE.—Messrs. J. and A. Churchill will publish shortly new editions of the following books. The eighth edition of a Manual of the Practice of Medicine, by Dr. Frederick Taylor. Besides much additional matter a new feature of the book will be the inclusion of skiagrams.—The second edition of a Manual of Ophthalmic Surgery and Medicine, by Mr. W. H. H. Jessop. There will be numerous new illustrations.—The fifth edition of a Short Practice of Midwifery, by Dr. H. Jellett. The work has been considerably enlarged by the inclusion for the first time of coloured plates.—The eighth edition of Qualitative Analysis and Practical Chemistry, by Dr. Frank Clowes.—Also new works, entitled a Manual for Midwives, by Dr. C. J. N. Longridge of Queen Charlotte's Hospital and examiner to the Central Midwives Board. All the 50 illustrations have been specially drawn for the book.—The Thermal Treatment of Aix-les-Bains, by Dr. H. Forestier, physician to the Bathing Establishment of the Thermal Hospital, Aix-les-Bains.

ROYAL DENTAL HOSPITAL, LEICESTER-SQUARE, LONDON.—The fiftieth annual general meeting of governors was held at the hospital on March 26th, the Hon. W. F. D. Smith, M.P., being in the chair. The committee of management reported that the total number of patients during the year was 20,643, their attendances being 53,470, and that the total amount received for the general maintenance fund was slightly under that of the previous year—viz., £5146, against £5250. The sums received from King Edward's Fund, the Hospital Sunday Fund, and the Hospital Saturday Fund amounted together to £1002. A legacy of £1000 had been received for the general purposes of the hospital and £225 from the executors of the late Mr. John L. Toole. £1000 had also been bequeathed to the hospital by the late Mr. A. J. Woodhouse, formerly a vice-president of the hospital, to found a scholarship in dental surgery to be called the "Alfred James Woodhouse Scholarship." As regards expenses the year ended with liabilities to tradesmen of £586 and of £790 for the instalment of principal and interest due on the mortgage of £47,400, on which the fixed yearly payment is £2975. The committee earnestly appeals for funds to discharge these liabilities. The bankers are Messrs. Barclay and Co., 1, Pall Mall East, S.W.; the treasurer is Mr. F. A. Bevan, and the secretary is Mr. J. F. Pink.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Resignation of the Prime Minister.

GENERAL sympathy with Sir HENRY CAMPBELL-BANNERMAN was expressed at Westminster when the announcement was made that his very serious illness had necessitated his resignation of the post of Prime Minister. The event was foreseen, although its formal announcement was not expected until Parliament should have in the usual course risen for the Easter vacation. Mr. ASQUITH has been sent for by HIS MAJESTY, who is at Biarritz, and as Parliament could not usefully continue to sit during the rearrangement of ministerial offices both Houses have adjourned until Tuesday, April 14th.

The Official Directory of Nurses Bill.

Lord AMPTHILL has given notice of his intention to move the rejection of Lord BALFOUR of BURLEIGH'S Official Directory of Nurses Bill, when the second reading is moved. This, however, will not occur until the House of Lords reassembles after the Easter Recess.

Poisons and Pharmacy Bill.

The Joint Committee of both Houses of Parliament has been

taking evidence on this Bill, but for the most part it has related to the sale of dips and insecticides used in agricultural or horticultural operations. Mr. JESSE BOOT, managing director of Boots' Cash Chemists, appeared as a witness on Thursday, April 2nd. He contended that the term "chemist" was not a professional but a trade title. He, however, expressed himself in favour of including in the Poisons and Pharmacy Bill a provision compelling every limited liability company dealing in drugs to employ qualified chemists in every shop or department.

Vivisection (Abolition) Bill.

Mr. HODGE has introduced into the House of Commons a Bill to provide for the total abolition of vivisection. It was read a first time.

Public Health (Markets in Rural Districts) Bill.

A Bill has been introduced into the House of Commons by Mr. BURNS, the President of the Local Government Board, "to make the provisions of the Public Health Act, 1875, with respect to the provision and regulation of markets, applicable in rural districts." It has received a first reading as a matter of form.

The Protection of Newly Born Children.

Lord ROBERT CECIL intended to present a Bill in the House of Commons on Monday "to provide for the better protection of the lives of new-born children." However, the adjournment of the House prevented him from carrying out his intention. The Bill will in all probability be introduced on the first convenient opportunity.

Coroners' Inquests (Railway Fatalities) Bill.

The text of Sir FRANCIS CHANNING'S Bill to amend the law as to coroners' inquests in the case of fatal accidents on railways has now been made public. It was introduced into the House of Commons at the beginning of February and is designed to facilitate the attendance of a representative of the Board of Trade at the inquest.

HOUSE OF COMMONS.

WEDNESDAY, APRIL 1ST.

The Milk-supply of London.

Sir FREDERICK BANBURY asked the President of the Local Government Board whether he was aware that the medical officer of the City of London recently reported in some detail upon the unsatisfactory condition of the milk supplied within the City, with suggestions for preventing the contamination of such milk; whether he had received a copy of that report with certain representations from the corporation based thereon; and whether he intended dealing with the subject in his Bill.—Mr. BURNS replied: I have received a copy of the report referred to. As I stated in reply to a previous question on this subject, I trust that the effects of the Bill which I hope to introduce will be to secure more satisfactory control over the milk-supply of the country.

Anthrax in Human Beings.

Mr. ASHLEY asked the President of the Local Government Board whether his attention had been called to the report of the inquest held in the City Coroner's Court on March 11th on the death of Mary Ellen Pooley from anthrax; and whether, having regard to the fact that a death from anthrax was investigated in the same court on Feb. 8th and to the recommendations of the jury, in which the city coroner concurred, that cases of anthrax ought to be included in the list of diseases compulsorily notifiable to medical officers of health, he would take steps to give effect to that recommendation.—Mr. BURNS answered: My attention has been called to the report of this inquest. As I have stated in reply to a question by the honourable Member for the Ashford Division, it is competent for a sanitary authority, with the consent of the Local Government Board, to make cases of anthrax in human beings compulsorily notifiable in its district.

Tuberculosis in Ireland.

Mr. DEVLIN asked the Chief Secretary to the Lord Lieutenant of Ireland whether his attention had been called to the prevalence of tuberculosis amongst children attending the elementary schools in Ireland; whether he had any figures or reports bearing upon the subject; and whether he would consider the advisability of ordering an inquiry into this matter, with a view to taking some effective means of mitigating the consequences of the disease amongst these children.—Mr. BIRRELL furnished the following written reply: My attention has not been specially called to the prevalence of tuberculosis among school children in Ireland, but I am, of course, aware of the regrettable prevalence of the disease in the country generally, and am fully alive to the importance of dealing with the subject. The Commissioners of National Education have no statistics as to the number of children affected with tuberculosis. They inform me that they have taken what steps they may to prevent the spread of tuberculosis by the exhibition of notices in the schoolrooms calling attention to the danger of the disease. The Tuberculosis Prevention (Ireland) Bill, which is in course of preparation, will provide for the compulsory notification of the disease and will contain other provisions for dealing with the evil. In view of the proposed legislation a special inquiry into the case of the school children does not seem to be necessary.

The Children's Bill.

The adjourned debate on the Children's Bill was resumed and after discussion the motion for the second reading was agreed to.

THURSDAY, APRIL 2ND.

Meat Inspection.

Captain FABER asked the honourable Member for South Somerset, as representing the President of the Board of Agriculture, whether, seeing the loss which was now borne by breeders and butchers through the frequent slaughtering of fat cattle on account of disease, he could see his way to recommend substantial compensation to them and also a uniform system of inspection of meat by qualified men.—Mr. BURNS (the President of the Local Government Board) replied: I presume that the disease referred to in this question is tuberculosis. If so, I would point out that the slaughter of animals suffering therefrom is seldom effected at the instance of local authorities; their duties are in the main confined to the examination and seizure of unsound meat intended for the food of men, and hence they do not commonly arise until the animal has been slaughtered. I cannot make any promise with regard to compensation, but I may state that the Local Government Board has issued more than one circular with a view of securing uniformity in the methods of inspection and seizure of meat, and they believe that the views expressed in those circulars are usually acted upon by local authorities.

A Staffordshire Inquest.

Mr. T. F. RICHARDS asked the Secretary of State for the Home Department whether his attention had been called to the death of a man named David Pearson at Tipton, in Staffordshire, upon whose body an inquest was held and a verdict returned of death from natural causes, accelerated by excessive drinking and exposure; whether he was aware that it was alleged that a noxious drug had been given this man; whether, in the circumstances, the authorities had taken the necessary steps to elicit the true cause of this man's death; and whether he intended to take any steps towards making further inquiries into this case.—Mr. GLADSTONE answered: I have no information as to this case save that contained in the newspaper report which the honourable Member has kindly sent me, but I am making inquiries and will communicate the result to him.

Vivisection and Dog Licences.

Mr. ELLIS GRIFFITH asked the Secretary to the Treasury whether it was customary for the authorities of laboratories licensed for vivisection to pay the tax on the dogs which they keep for that purpose; if so, would he state the number of licences issued by the Inland Revenue to such authorities during the last two years; if it be the fact that no such taxes were paid what was the ground of such exemption; and whether applications for such exemptions were made in those cases as provided by Subsection 1 of Section 5 of the Dogs Act of 1906.—Mr. RUNCIMAN said in reply: Licence duties are paid on all dogs used for the purposes stated, but no separate record is kept of the precise number of licences thus issued.

A Mysterious Death.

Mr. GULLAND asked the Lord Advocate whether he had made inquiries into the circumstances attending the recent death of a boy at Stranraer, which had been attributed to poisoning due to chocolate sweets eaten by him; and if so, whether the inquiries threw any light on the cause of death.—Mr. SHAW replied: Full inquiries have been made regarding this case. The contents of the boy's stomach and intestines have been subjected to analysis without the slightest trace of poison being found. The answer to the second part of the question is in the negative.

Meat Inspection in Scottish Burghs.

Mr. WATT asked the Secretary for Scotland whether he was aware that it was the practice of some local authorities in Scotland to let the burgh slaughter-house to yearly tenants, who reimbursed themselves by the collection of dues from butchers for the use of the slaughter-house, and that these tenants performed the duty of meat inspectors; and would he say what control the local authorities had over the yearly tenants of the burgh slaughter-houses to insure the proper discharge of their duties as official meat inspectors; and would the local authorities demand that these tenants should have the qualifications for meat inspectors specified under Recommendations, Meat—B, by the Royal Commission on Tuberculosis, 1898.—Mr. SINCLAIR replied (by written answer): I am aware that in several burghs the slaughter-house is let to a local butcher who in some instances reimburses himself by the collection of dues; that in one or two instances known to the Local Government Board the tenants are understood to report diseased or unsound carcasses to the sanitary officials; but that, in the majority of burghs with public slaughter-houses, the sanitary inspector and veterinary surgeon visit daily or at such other intervals as may be necessary for effective supervision. So far as I am aware the local authorities do not demand that the tenants of their slaughter-houses shall possess the qualifications specified by the Royal Commission on Tuberculosis.

Post Office Medical Officer at Coventry.

Mr. JAMES O'CONNOR asked the Postmaster-General whether he was aware that the medical officer of the post-office at Coventry was about 85 years of age and that many of the staff at Coventry attended other medical men at their own expense, owing to their dissatisfaction with the medical officer's treatment; and whether, in view of his advanced age, steps would be taken to appoint another medical officer.—Mr. BUXTON furnished the following written answer: I am having inquiry made and will communicate the result to the honourable Member.

A Seizure of Food in London.

Mr. COURTHOPE asked the President of the Local Government Board whether a quantity of preserved kidneys imported from America had been seized in the City of London as unfit for human food; what quantity of boric acid or other preservative they contained and what quantity of such preservative per gallon and per pound was considered deleterious to health; and when the promised regulations dealing with the importation and sale of unsound food would be issued.—Mr. BURNS (by written answer) replied: The answer, as regards the first point in the question, is in the affirmative. Two samples were submitted to the public analyst. In the first case he reported that the fluid in which the kidneys were preserved and the kidneys themselves each contained 2·1 per cent. of boric acid, which was equivalent to 1470 grains per gallon of the fluid and 147 grains per pound of the kidneys respectively. In the other case the analyst's report showed that the kidneys contained 1·46 per cent. of boric acid (equivalent to 102·2 grains per pound), whilst the fluid contained 1·7 per cent. of boric acid (equal to 1190 grains per gallon). The answer, as regards the third point, depends on a number of considerations which cannot conveniently be discussed in reply to a question. I may, however, say that the presence in imported kidneys of proportions of boric acid so large as those given above is decidedly objectionable from the point of view of public health and I am advised that it is wholly unnecessary. I propose to give special attention to imported preserved kidneys in the regulations referred

to in the last part of the question. These regulations are in an advanced state of preparation.

FRIDAY, APRIL 3RD.

Irish Poor-law Medical Officers.

In the course of the debate on the motion for the second reading of the Poor-law (Ireland) Bill,

Mr. BIRRELL (Chief Secretary to the Lord Lieutenant) said that next year he would do his best to introduce a Bill dealing with the Irish Poor-law administration. He could not assent to the Bill under discussion.

Mr. HUGH BARRIE urged that the Bill should be read a second time and sent to a committee. Many of its provisions could be put into operation at small cost. Under it it would be competent for local authorities to give grants in aid of sanatoriums for consumptives. He was in this connexion glad to acknowledge the work done by the Countess of Aberdeen and by the combined efforts of other ladies in different parts of Ireland in endeavouring to check the ravages of tuberculosis.

Mr. FETHERSTONHAUGH expressed a hope that in their future legislation the Government would deal with the position and status of Poor-law medical officers in Ireland. The conditions under which they were appointed were unsatisfactory. The best men were not always secured owing to the very narrow localism which prevailed in many cases. The conditions under which they served were absolutely fatal to their position.

The Bill was subsequently rejected by 89 votes to 35.

Coroners' Inquests Bill.

Mr. HIGHAM moved the second reading of the Coroners' Inquests Bill. Its purpose is to make the viewing of bodies not compulsory but optional in the discretion of the coroner. He contended that in many cases the viewing of the body was not only exceedingly distasteful to the jury but exposed them to personal risk of infection.

Mr. H. SAMUEL (Under Secretary for Home Affairs), in assenting to the second reading, reserved to the Government the liberty of proposing amendments at a later stage if they thought fit, particularly in reference to the proposal that the coroner himself should be exempt from the viewing of the body.

The second reading was carried by 118 votes to 45.

Overcrowding in Scotland.

An elaborate return has been presented to Parliament showing the housing conditions of the population of Scotland. In it it is noted that the proportion of the total population living more than two per room has fallen from 56·57 per cent. in 1861 to 45·68 in 1901; that the proportion living more than three per room has fallen from 33·83 per cent. in 1861 to 22·91 in 1901; and that the proportion living more than four per room has fallen from 18·67 per cent. in 1861 to 9·56 in 1901.

MONDAY, APRIL 6TH.

The Medical Examination of Engine-Drivers.

Mr. LONSDALE asked the President of the Board of Trade whether he had considered the report of Lieutenant-Colonel Yorke that the collision on the London and North-Western Railway near Atherton station was due to the debilitated condition of the driver, and to the fact that he was in the last stage of a fatal complaint; and whether he intended to take any measures to secure the more frequent medical examination of engine-drivers.—Mr. LLOYD GEORGE replied: I am already in communication with the principal railway companies on the subject of the medical examination of engine-drivers, and I am calling their special attention to Colonel Yorke's report on the accident near Atherton.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, AND COX, 8, Henrietta-street, Covent-garden, London, W.C.

The Pocket Osteology. By Philip Turner, B.Sc., M.B., M.S. Lond., F.R.C.S., Demonstrator of Anatomy, Guy's Hospital. Price 3s. net.

BUTTERWORTH AND CO, 11 and 12, Bell Yard, Temple Bar, London. (SHAW AND SONS, 7 and 8, Fetter-lane, London, E.C.)

Shaw's Manual of the Vaccination Law. By John Lithiby, C.B., LL.B., of the Middle Temple, Barrister-at-Law. Eighth edition. Price not stated.

CASSELL AND COMPANY, LIMITED, London, Paris, New York, Toronto, and Melbourne.

The Townsman's Farm. By "Home Counties," Author of "Poultry Farming: Some Facts and Some Conclusions," "Country Cottages," "The Case for the Goat," &c. Price 6s. net.

CHURCHILL, J. AND A., 7, Great Marlborough-street, London, W.

Practical Pharmacy. By E. W. Lucas, F.I.C., F.C.S., Pharmaceutical Chemist, late Member of the Board of Examiners of the Pharmaceutical Society of Great Britain, Member of the Committee of Reference of the British Pharmacopœia. Second edition. Price 12s. 6d. net.

Abdominal Tuberculosis. By A. Ernest Maylard, M.B., B.S. Lond., Surgeon to the Victoria Infirmary, Glasgow. Price 12s. 6d. net.

CONSTABLE, ARCHIBALD, AND CO., LIMITED, London.

The Soul of Spain. By Havelock Ellis. Price 7s. 6d. net.

KIMPTON, HENRY, 13, Furnival-street, Holborn, London, E.C. (STENHOUSE, ALEXANDER, 40 and 42, University-avenue, Glasgow.)

Kimpton's Essential Series. Essentials of Surgery. An Outline of Surgical Pathology, Diagnosis, and Treatment. For Students and Practitioners. By Alwyne T. Compton, F.R.C.S. Price 4s. net.

LAURIE, T. WERNER, 13, Clifford's Inn, Fleet-street, London, E.C.

London Churches, Ancient and Modern. By T. Francis Bumpus. First Series. Mediæval and Early Renaissance. Price 6s. net. Second Series. Classical and Modern. Price 6s. net.

MONI AND CO., Chickpet, Bangalore City, India.

A Handbook of Clinical Microscopy. By M. Kesava Pai, M.B., C.M. Madras, Assistant Surgeon, Madras Medical Department, and P. S. Ramachandrier, Mysore Medical Department. Price Rs.3.8.

NISBET, JAMES, AND CO., LIMITED, 22, Berners-street, London, W.

Injuries of Nerves and Their Treatment. By James Sherren, F.R.C.S. Eng., Assistant Surgeon to the London Hospital; Surgeon to the Poplar Hospital for Accidents; late Erasmus Wilson Lecturer, Royal College of Surgeons. Price 5s. net.

PROGRÈS MÉDICAL, AUX BUREAUX DU, 14, Rue des Carmes, Paris (ALCAN, FÉLIX, 108, Boulevard St. Germain, Paris.)

Recherches Cliniques et Thérapeutiques sur l'Épilepsie, l'Hystérie, et l'Idiotie. Compte Rendu du Service des Enfants Idiots Épileptiques et Arriérés de Bicêtre pendant l'Année 1905. Par Bourneville, Médecin de Bicêtre. Volume XXVI. Price Fr.7.

SCIENTIFIC PRESS, LIMITED, 28 and 29, Southampton-street, Strand, London, W.C.

A Guide to Sick Nursing in the Tropics. By Andrew Duncan, M.D., B.S. Lond., F.R.C.P., F.R.C.S., Fellow of King's College, London; Physician to the Seamen's Hospital Society; Lecturer on Tropical Diseases, Westminster Hospital Medical School; Lecturer at London School of Tropical Medicine. Price not stated.

SISLEYS, LIMITED, 9, Duke-street, Charing Cross, London.

The Wife: Her Book. By Haydn Brown, L.R.C.P., &c., Edin., Fellow of the Royal Institute of Public Health and of the Obstetrical Society, London. Popular edition. Price 2s. net.

STEINHEIL, G., 2, Rue Casimir-Delavigne, Paris.

Les Pseudo-Bacilles Acido-Résistants. Critique des Méthodes de Coloration du Bacille Tuberculeux. Révision du Groupe des Bacilles dits Acido-Résistants. Par le Dr. André Philibert, Interne Lauréat des Hôpitaux de Paris (Médaille d'Or, Médecine, 1907), Licencié ès Sciences Naturelles, Lauréat de l'Académie de Médecine. (Prix de Médecine Stansky, 1904—Prix Oulmont, 1907) (Travail du Laboratoire de Bactériologie de la Faculté de Médecine de Paris). Price Fr.4.

Le Cancer: Prophylaxie, Étiologie, Traitement. Par le Docteur O. Sobre-Casas, Médecin de l'Hôpital Rawson, Buenos Aires. Price Fr.3.50.

L'Aphasie de Broca. Par le Dr. François Moutier, Ancien Interne Lauréat des Hôpitaux de Paris, Licencié ès Sciences. (Travail du Laboratoire de M. le Professeur Pierre Marie, Hospice de Bicêtre.) Price Fr.25.

STUBER, A. (CURT KABITZSCH), Würzburg.

Heilende Strahlen. Arbeiten über die Grundlagen und die praktische Ausübung der Strahlentherapie. (X-Strahlung, Lichtstrahlung und Radioaktivität). Gesammelte Aufsätze. Von Ingenieur Friedrich Dessauer. Band II. Price M.2.50; bound, M.3.20.

Die Krankheiten der Nasenscheidewand und ihre Behandlung. Von Dr. Leo Katz, Spezialarzt für Ohren-, Nasen- und Halskrankheiten in Kaiserslautern. Price M.6.80; bound, M.8.

UNWIN, T. FISHER, 1, Adelphi-terrace, London, W.C.

Health at Its Best *v.* Cancer. By Robert Bell, M.D., F.F.P.S., Formerly Senior Physician to the Glasgow Hospital for Women. Price 5s. net.

VOGEL, F. C. W., Leipzig.

Krankenhauswesen und Heilstättenbewegung im Lichte der Sozialen Hygiene. Von Dr. med. Alfred Grotjahn, Berlin. Price M.10.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ALLAN, H. W., M.R.C.S., L.R.C.P. Lond., has been appointed Assistant Medical Inspector of Schools for the Wells District of Somerset.

BAIRD, HARVEY, M.D., Ch B. Edin., has been appointed Assistant Medical Officer at the Cardiff Mental Hospital.

BROWNE, FRANCIS JAMES, M.B., Ch B Aberd., has been appointed Surgeon to the Powells Tillery Collieries, Abertillery (Mon.).

CALDWELL, M. F., M.B., B.Ch. Irel., has been appointed Junior Assistant Medical Officer at the Cardiff Mental Hospital.

DOWNES, HAROLD, M.B., L.R.C.P. Edin., has been appointed Medical Superintendent to Benenden Sanatorium.

EDWARDS, WILLIAM LLOYD, L.R.C.P. Lond., M.R.C.S., D.P.H. Lond., has been appointed Assistant Medical Officer of Health and Medical Inspector of School Children by the Barry (Glamorganshire) District Council.

FORDE, T. A. MUNRO, M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Senior Surgeon to the Royal Hospital, Portsmouth.

GRIFFITHS, EVAN JOHN, M.B., Ch.B. Edin., has been appointed Medical Officer for the Inspection of School Children by the Pontypridd Education Committee.

HEBBLETHWAITE, A. G., M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Physician to the Keighley Victoria Hospital.

JAGO, W. I., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon at the Warneford, Leamington, and South Warwickshire Hospital.

LAWRIE, D., M.B., M.S. Glasg., has been appointed Assistant Medical Inspector of Schools for the Glastonbury District of Somerset.

NASH, J. T. C., M.D., C.M. Edin., D.P.H. Cantab., has been appointed Medical Officer of Health to the Norfolk County Council.

ORTON, G. HARRISON, M.D., B.C. Cantab., has been appointed Medical Officer in Charge of the X Ray Department at St. Mary's Hospital.

PAGE, H. M., F.R.C.S. Eng., has been appointed Honorary Anæsthetist to Guy's Hospital.

PARKER, GIBSON, M.D. Lond., D.P.H. Cantab., has been appointed Chief Assistant Medical Inspector of Schools for Somerset.

PRICE, FREDERICK W., M.B., C.M. Edin., has been appointed Physician to the Out-patient Department at the Hampstead General Hospital.

SHIPWAY, F. E., M.B., M.S. Cantab., has been appointed Honorary Anæsthetist to Guy's Hospital.

STEVENSON, T. H. C., M.D. State Med. Lond., has been appointed Chief Medical Inspector of Schools for Somerset.

WRIGHT, A. B., M.R.C.S., L.R.C.P., has been appointed Honorary Senior Surgeon to the Royal Hospital, Portsmouth.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRMINGHAM, QUEEN'S HOSPITAL.—Third Surgeon to Out-patients. Salary £50 per annum.

BLACKBURN AND EAST LANCASHIRE INFIRMARY.—Junior House Surgeon. Salary £70 per annum, with board, washing, &c.

BOOTLE HOSPITAL FOR INFECTIOUS DISEASES.—Resident Medical Officer, unmarried. Salary £120 per annum, with board, washing, and apartments.

BRIDGEND, GLAMORGAN COUNTY ASYLUM.—Junior Assistant Medical Officer. Salary £150 per annum, with board, apartments, attendance, and washing.

BRIDGWATER HOSPITAL.—House Surgeon. Salary £100 per annum, with board, lodging, and laundry.

CAMBERWELL HOUSE ASYLUM, London, S.E.—Second Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, and laundry.

CAPE TOWN, SOMERSET HOSPITAL.—Junior House Physician and Two Junior House Surgeons. Salary £200 per annum, with quarters and rations.

CARMARTHEN, JOINT COUNTIES LUNATIC ASYLUM.—Second Assistant Medical Officer. Salary £160 per annum, with board, lodging, washing, and attendance.

CHELTENHAM GENERAL HOSPITAL.—House Physician, unmarried. Salary £70 per annum, with board and lodging.

EDMONTON URBAN DISTRICT COUNCIL EDUCATION COMMITTEE.—School Medical Officer. Salary £250, rising to £300.

EGYPTIAN GOVERNMENT, KASR EL AINY HOSPITAL.—Resident Surgical Officer. Salary £250 per annum, with quarters, servants, washing, coal, and light.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge road, London, S.E.—Honorary Anæsthetist. Also House Physician for nine months and House Surgeon for six months. Salary in each case at rate of £60 per annum, with board, residence, and washing.

GLASGOW, CORPORATION OF, PUBLIC HEALTH LABORTORY.—Junior Assistant Bacteriologist. Salary 3 guineas per week.

HÔPITAL FRANÇAIS, 172, Shaftesbury-avenue, W.C.—Second Resident Medical Officer. Salary £50 per annum, with board and lodging. Also Third Physician to Out-patients.

HORNSEY TOWN COUNCIL.—Assistant Medical Officer of Health, &c., unmarried. Salary £225 a year, with rooms and board.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Surgeon, also Assistant Casualty Medical Officer, both for six months, and unmarried. Salary in each case £20, with board and residence. Also House Physician, unmarried, for six months. Salary £20, with board and residence.

KETTERING AND DISTRICT GENERAL HOSPITAL.—Resident Medical Officer, unmarried. Salary £80 per annum, with board and residence, &c.

LAMBETH INFIRMARY, Brook-street, Kennington-road, S.E.—Fourth Assistant Medical Officer. Salary at rate of £100 per annum, with residential allowances.

LANARK, MIDDLE WARD ISOLATION HOSPITAL.—Resident Physician. Salary £150 per annum, with board, &c.

LEEDS, HOSPITAL FOR WOMEN AND CHILDREN.—House Surgeon for six months. Salary at rate of £50 per annum, with board, &c.

LIVERPOOL DISPENSARIES.—Assistant Surgeon, unmarried. Salary £100 per annum, with board and apartments.

LONDON THROAT HOSPITAL, 204, Great Portland-street, W.—House Surgeon. Salary at rate of £50 per annum.

LOWESTOFT HOSPITAL.—House Surgeon, unmarried, for six months. Salary at rate of £80 per annum, with board, lodging, and washing.

MAIDSTONE, WEST KENT GENERAL HOSPITAL.—Senior House Surgeon, unmarried. Salary £100 per annum, with board, residence, and washing allowance.

MANCHESTER AND SALFORD HOSPITAL FOR SKIN DISEASES, Manchester.—Assistant Medical Officer. Salary £100 per annum.

MANCHESTER, UNIVERSITY OF.—Senior Demonstrator in Physiology. Salary £150, rising to £200 per annum.

MARGATE, ROYAL SEA-BATHING HOSPITAL.—Resident Surgeon. Salary at rate of £80 per annum, with board and residence.

MIDDLESEX HOSPITAL, W.—Second Assistant to the Director of the Cancer Research Laboratories. Salary £200 per annum.

NEW HOSPITAL FOR WOMEN, Euston-road.—Clinical Assistant (female) for the Out-patient Department.

NEWCASTLE-ON-TYNE, HOSPITAL FOR SICK CHILDREN.—Resident Medical Officer. Salary £100, with board, lodging, and laundry.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—Resident Medical Officer, Salary £80 per annum, with board, residence, and laundry.

NORTHAMPTONSHIRE COUNTY COUNCIL EDUCATION COMMITTEE.—School Medical Officer. Salary £300 per annum and travelling expenses.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House Surgeon, also As istant House Physician. Salary in each case £60 per annum, with board, lodging, and washing.

PADDINGTON GREEN CHILDREN'S HOSPITAL, London, W.—House Physician, also House Surgeon, both for six months. Salaries at rate of 50 guineas per annum, with board and residence.

PRESTON, COUNTY BOROUGH OF.—Schools Medical Officer. Salary £250 per annum.

PRESTON, LANCASHIRE EDUCATION COMMITTEE.—School Medical Superintendent. Salary £500 per annum, rising to £650, with expenses.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, London, N.—House Surgeon and House Physician; also Junior House Surgeon and Junior House Physician. All for six months. Salary of two former at rate of £75 per annum, and of two latter at rate of £40 per annum, with board, residence, and laundry.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Four Examiners in Anatomy and Four Examiners in Physiology. Also for the Conjoint Examining Board in England, Three Examiners in Anatomy, Two Examiners in Physiology, Four Examiners in Midwifery, and Two Examiners in Public Health.

ROYAL NAVY, MEDICAL DEPARTMENT.—Examination for not less than 15 Commissions.

RYDE, ROYAL ISLE OF WIGHT COUNTY HOSPITAL.—Resident House Surgeon. Salary £100 per annum.

SALISBURY INFIRMARY.—Assistant House Surgeon, unmarried. Salary £50 per annum, with apartments, board, and lodging.

SINGAPORE, STRAITS SETTLEMENTS, MUNICIPAL HEALTH DEPARTMENT.—Assistant Municipal Health Officer, unmarried. Salary $4200, rising to $4800.

SOUTHAMPTON, COUNTY BOROUGH OF.—Assistant Medical Officer of Health. Salary £150 per annum, with residence, board, and washing.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Honorary Assistant Physician.

SOUTHEND-ON-SEA, BOROUGH OF.—Medical Officer of Health. Salary £550 per annum.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon, unmarried, for six months, renewable. Salary at rate of £70 per annum, with residence, board, and washing.

SOUTH UIST (Southern Division).—Medical Officer. Salary £77 10s.

STAFFORD, STAFFORDSHIRE COUNTY ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £150 per annum, rising to £200, with board, lodging, and attendance.

STOCKPORT INFIRMARY.—Junior Assistant House Surgeon for six months. Salary £40 per annum, with board, washing, and residence.

STOKE-ON-TRENT, NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill.—House Physician. Salary £100 per annum, with apartments, board, and washing.

TRURO, ROYAL CORNWALL INFIRMARY.—House Surgeon, unmarried. Salary £100 a year, with board and apartments.

VENTNOR, ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—Assistant Resident Medical Officer, unmarried. Salary £100 per annum, with board and lodging.

WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, PARALYSIS, AND EPILEPSY, 73, Welbeck-street, W.—Honorary Registrar and Pathologist.

WOLVERHAMPTON AND MIDLAND COUNTIES EYE INFIRMARY.—House Surgeon. Salary £70 per annum, with apartments, board, and laundry.

Births, Marriages, and Deaths.

BIRTHS.

BEATTON.—On March 31st, 1908, at The Cliffe, Bradford, the wife of Dr. Gilbert T. Beatton, of a son.

BURROWS.—On April 5th, at Manor Park, London, to Dr. and Mrs. W. Edgcumbe Burrows—a son.

WELLS.—On April 2nd, at Orleans Lodge, Twickenham, the wife of Arthur G. Wells, M.B., B.S. Lond., M.R.C.S., L.R.C.P., of a son.

MARRIAGES.

HAMMAND FRASER—MCMULLEN.—On April 2nd, at Brixton Independent Church, S.W., David Hammand Fraser, M.A., M.B., B.C., to Annie Isabel, second daughter of William McMullen, L.R.C.S.I., of Brixton-road, S.W.

MCBRIDE—HULBERT.—On April 2nd, at St. Stephen's Church, Ealing, Walter, second son of P. McBride, M.D., F.R.C.P.E., and F.R.S.E., to Lilian, daughter of Maurice C. Hulbert, J.P.

VAN DEN BERGH—MACDONALD BROWN.—At Hampstead, on April 7th, Enid, only daughter of J. Macdonald Brown, Esq., J.P., M.D., F.R.C.S., of 2, Frognal, Hampstead, to Henry Edward, third son of J. Van den Bergh, Esq., of 26, Lyndhurst-road, Hampstead.

DEATHS

IN MEMORIAM.

WAKLEY.—On April 5th, 1907, at 5, Queen's-gate, S.W., Thomas Henry Wakley, F.R.C.S. Eng., eldest son of the late Thomas Wakley, M.P., and for over 20 years Joint Editor of THE LANCET, aged 86 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE ZAKKA KHEL EXPEDITION.

WE are indebted to a well-known member of the profession for the following interesting letters from his son, an officer in the Indian Medical Service:—

Bazar Valley, Field Force, Feb. 17th, 1908.

Well, here I am in the enemy's country. I got up to Peshawar early last Thursday morning, Feb. 13th, and was told I was very late as the force had started that morning. I was given orders to go on at once in a cart, taking nothing with me but my bedding and a change of clothing, and that if I did not go at once I should not catch them up, so I could not wait any time and in consequence came with practically nothing and no pony. What I forgot to put in in my hurry was an extra pair of boots and as this is awful country I am afraid mine will last no time. I don't know what I shall do. I am attached to a Field Hospital. The first day we marched to Jamrud at the entrance to the Khyber Pass and the next day to a place Ali Masjid in the middle of the pass. The next day we separated from our brigade which came on in front and had a good deal of fighting. Then yesterday we came on to join them. There was a little fighting and all last night they were sniping at us. I dug myself into a trench and heard a few bullets. To-day we have had a quiet day in camp. A few parties were sent out and there was a little firing but not much. We were jolly glad of a quiet day. At present no one seems to know what is going to happen. We are encamped in one of their villages, two of which we have destroyed. They have about three more. At present I fancy we will take one of those which is the biggest and destroy that and then, perhaps, after that get out or perhaps destroy the lot. Two of their chiefs came into camp this evening; of course, one doesn't know what it means. Probably only to find out our position, &c., really. The other brigade is about five miles behind us. I fancy they are coming up to-morrow and they will probably then be given their chance. Some people seem to think the whole thing will last only about a fortnight. In that case we probably shall not get a medal which will be bad luck. We have only had a few casualties, two men killed and three badly wounded. One has to rough it a good bit and our food is not exactly delightful but we do not do badly. I have no time to write more.

Peshawar, March 3rd, 1908.

By the address you will see we are back again from the Bazar Valley. I will try and write you an account of the whole show, as up to now I have not been able to write much, as in the first place I did not know much about what was to happen, &c. I daresay you have read a little bit about it in the papers.

First of all the cause of the expedition. This was due to raids on Peshawar by the Zakka Khels. The Zakka Khels are one tribe of the Afridis and live in the Bazar Valley which is the other side of a range of hills surrounding Peshawar.

They had several times raided Peshawar city by night and killed a man or two and carried away booty. Their last and most daring raid was the one which really gave rise to the expedition. They came into the city by night, disguised of course, and carried out their work by means of pretending a marriage ceremony was in course of progress. At these ceremonies in this country apparently they make a great noise, beating drums, &c. Well under cover of this noise they broke into several shops, killing any who attempted to stop them, and went off with a lakh of rupees (£6666). The police did not attempt to interfere, thinking it was only a marriage ceremony. Well, after that it was decided to punish them and they were only waiting for permission from the Home Government. The whole plan was to take them by surprise and everything was kept very secret. We started off on the morning of Feb. 13th and marched to Jamrud, which is just outside the Khyber Pass at the beginning, about 10 miles from Peshawar. Our force consisted of two brigades made up as follows, General Sir J. Willcocks in command of the whole:—

1st Brigade (General Anderson).—Warwicks, 2nd Battalion 5th Ghurkas, 59th Rifles, 53rd Sikhs, 1 Mountain Battery, No. 101 Native Field Hospital.

2nd Brigade (General Barrett).—Seaforth Highlanders, 45th Sikhs, 54th Sikhs, 28th Punjabis, 1 Mountain Battery, 1 company sappers and miners, No. 102 Native Field Hospital.* (* This is where I was.)

We stopped at Jamrud the night of the 13th and proceeded next day to Ali Masjid through the Khyber Pass. The Khyber Pass begins at Jamrud, it proceeds to Ali Masjid and here breaks off into two different paths, one goes to Landi Kotal and into Afghanistan, the other to Chora Kotal, where it enters the Bazar Valley. The road was good as far as Ali Masjid where we camped on the 14th. On the 15th we moved off in two parts, the 2nd Brigade going ahead without baggage and with two days' rations. Two out of the four of us went with them and the other two stopped behind with the 1st Brigade and baggage. The other party consisting of the 1st Brigade, the baggage of both brigades and the field hospitals moved off about two hours later and got into the Bazar Valley and reached Chora, a village belonging to a friendly section of the Zakka Khels and which had been handed over to the troops at once. Here we camped for the night. The 2nd Brigade which had gone on in advance after leaving Chora had a stiffish time, and were fighting the whole day and night. The reason probably that they were not attacked before reaching Chora was that we came in so quickly that the Zakkas had no time to do more than get their wives and families into Afghanistan.

On the next day, the 16th, the rest of the field hospital with which I was were ordered to go on and rejoin the 2nd Brigade and also take on their baggage. We caught up with them just before Walai, which village they then proceeded to take and destroy. We then encamped on that site, which was our headquarters for the rest of the campaign. We had hardly got into camp when we were again attacked from a high hill near the camp. The 45th Sikhs and Seaforth Highlanders were sent to take the hill, which they did, two men of the 45th being severely wounded with broken thighs. That night pickets were put on all the surrounding hills, but during the night they were attacked and some of the Zakkas must have got between them and shot into camp. On the 17th we had a rest during the day; at night there was again a good deal of shooting into camp, which continued most of the time we were there, though it rather slackened off towards the end. On the 18th a force was sent to attack and destroy China, the capital of the Zakkas. I went with them. We took it fairly easily and blew up their fortifications till about 3 o'clock, when we returned to camp. As we were returning they came up behind us, following up quickly, and we had a good many men hit before the last got back into camp.

The 1st Brigade came up to Walai that day and joined us, with the exception of one regiment and the other field hospital, which were left at Chora.

On the 19th the 1st Brigade went out to finish the destruction of China, which they did without any loss, and on the 20th they finally razed it to the ground. On the 21st the greater portion of both brigades went right to the end of the valley to a place, Halwai, which they destroyed and returned to camp fairly early, though a good many men were wounded on the return journey. On the 22nd the 1st Brigade went out and destroyed a small village near Walai. The 23rd was a slack day. On the 24th another small village was destroyed. On the 25th a jirgah or council of the tribes round about came into the camp to try and stop the proceedings. General Willcocks talked to them and it was understood that they were to interview the Zakkas and bring their head men into camp to discuss conditions. They were given two days for this. During this time we did nothing. On the 28th the jirgah returned with the Zakkas, about 1000 altogether. They sat and discussed and the terms were agreed to. The terms were that they were to be of good behaviour, to punish the raiders on Peshawar, 60 rifles were taken from them which are to be returned when the political agent is of opinion that the raiders have been sufficiently punished, and that they were not to molest us on our retiring from the country.

We left Walai on the 29th and the 2nd Brigade marched straight through to Ali Masjid, the 1st Brigade stopping at Chora. The next day we marched to Jamrud and the 1st Brigade doing a double march joined us there, and yesterday we all marched back to Peshawar, which we reached about one o'clock. The regiments went into camp and marched to their various stations, except those that came from Peshawar.

We, the field hospital, went to an old hospital here and dumped down our boxes of medicines, hospital tents, &c., and had to wait till to-day for a receipt of their correctness. We all four came to the Dak bungalow for the night. A Dak bungalow is a bungalow provided by Government for travellers. It contains a cook and bed, chair and table, and one stops there, bringing all one's kit.

We had some snow and rain the whole of one day and night just before we left Walai, and as one is in the open it was distinctly unpleasant. I had made a small tent out of tarpaulins and that kept me fairly dry at night.

The worst part of the whole show was the dirt. I did not change my clothes the whole time and slept in them at night. I slept in a pit dug in the ground and the soil used to drop on me and into my bedclothes. The feeding, too, was not too good, but we did not do badly on the whole, because we took out a good many tins of different articles, jam, &c., and every second day we got fresh meat from the commissariat after the first week.

I am going back to Bareilly to-night and will finish this there.

March 5th.

I arrived at Bareilly at 3 A.M. this morning. I find my place has not been filled up and so I hope to stop on here for some time. I may possibly not be moved till the hot weather is over. I have got back into my same rooms, but have a new bearer, as my last one ran away on the way up to Peshawar. It is much hotter here than in the Bazar Valley. I stayed a day at Peshawar. I went into the city there and made a few purchases. It is *the* place to buy carpets and all the finest come there from Persia—i.e., the old ones. I have been the whole day getting my room straight, as I had packed all my things. I received your letter to-day which reached here last Sunday. They did not send it on I am glad to say. I am very fit after my campaign.

BRACHYCLADI STUCKERTI.

IN the *Pharmaceutical Journal* of March 7th, Mr. E. M. Holmes contributes an interesting article on Brachycladi Stuckerti, a South American plant which has been employed by the natives of Argentina for the mountain affection known locally as "mal de puna." In asthma the continued use of an infusion of the

whole plant is stated to produce in time a considerable alleviation of the attacks and when smoked in the form of cigarettes immediate relief is said to be experienced. The continued use of the cigarettes induces sleep, followed by a slight sensation of heaviness in the head. They smell pleasantly of coumarin. In Germany the plant is erroneously known under the name "punaria accochingae." The dried and powdered whole plant is made into tablets weighing five grammes each and the latter are attached to pieces of wood charcoal and placed on a coal fire. The patient inhales the vapour from the burning tablet, with the result, it is said, that at first a slight cough is induced, but afterwards the respiration becomes deeper and the asthma disappears.

A BAD STARTER.

To the Editor of THE LANCET.

SIR,—I think that "Anxious Guardian" would find that, in mathematics, the "Medical Preliminary Examination" of the Educational Institute of Scotland is a much easier examination than that of the College of Preceptors. The offices of the institute are at 30, Princes-street, Edinburgh.—I am, Sir, yours faithfully,

April 6th, 1908. A MEDICAL STUDENT.

THE "NATIONAL HEALTH" MILK PASTEURISER.

THE construction of this apparatus, though perfectly simple, renders the pasteurising process effective and speedy. It comprises (1) an inner vessel or a milk container; (2) an outer vessel provided with a circular base projecting an inch beyond the body of the apparatus; (3) a shallow conical internal vessel having a double bottom perforated; (4) a second shallow cone for directing the water flow; and (5) a vertical circulating cylinder with openings at the top. The action is as follows. The milk being placed in the inner container the circulator is filled up to the centre of the openings at the top. The burner is started and at once a uniform circulation commences. As the water in the base boils it is forced upwards through the annular space formed by the shallow conical vessel immediately above, and this action is repeated through the second cone which then directs the water flow to the top where it streams through the perforations and descends down the outer surface of the milk container, finally returning to the heating base to go through the same circulatory process again. The object of this circulatory system is to prevent the boiling water from becoming directly mixed with the heated water circulating round the milk in the inner vessel, thus reducing the tendency of the proteins of the milk to coagulate while raising it quickly to the heat required for complete pasteurisation. The action, in short, is that the water surrounding the milk container is kept in rapid circulation by coming into contact with the water in violent ebullition in the ebullition-chamber, causing an upward current on the outside of the circulating cylinder and a downward current against the outside of the milk container. The apparatus, which we found to work in complete accordance with these statements, was submitted to us by Mr. W. Lawrence of 19, Brackley-terrace, Chiswick, London, W.

CARE OF FEEBLE-MINDED GIRLS.

THE Birmingham Laundry and Homes of Industry is a society which devotes itself more especially to the protection and care of feeble-minded women and girls. It accomplishes a large amount of good work yet it fails at the critical point, just as all such societies must fail whilst the law regarding the feeble-minded remains unchanged; for the society has no legal control over those who are not capable of judging for themselves and consequently it finds that, now and then, when its persuasive powers fail, it is forced to dismiss from its homes certain individuals who long for things which the homes cannot give and whose lives after they leave the homes are sure to lead to disaster both for themselves and the community at large. It is to be hoped that when the report of the Royal Commission appears it will urge the adoption of the only plan with regard to the feeble-minded of both sexes which offers any hope of an ultimately good result.

WANTED—A HOME.

To the Editor of THE LANCET.

SIR,—Can any of your readers inform me where a girl of 17 years, the child of epileptic parents, can be taken care of? She is untidy, careless, and wayward; in fact, seems developing the usual symptoms of such cases. The parents are only able to afford a small sum weekly, though they are of the better class.

I am, Sir, yours faithfully,

H. P. GILBERT.

The Elms, Whitley Park, Reading, April 7th, 1908.

CLOTHING EXHIBITION.

AN exhibition was opened at the Royal Agricultural Hall, London, on April 6th, which is officially termed "The First Clothing and Outfitting and Allied Trades Exhibition and Market." It has been organised by the International Trade Exhibitions, Limited, London, and its primary object is to promote commercial relations between buyers and sellers, whereby in a period of ten days may be viewed a collection of productions and manufactures which would ordinarily entail upon the buyer considerable journeying and expense. Although the exhibition is strictly for the wholesale trades referred to the management has decided to open it to the general public each day after 3 P.M. The exhibition remains open until 10 P.M. and will finally close on April 16th.

M. H.—We believe that the institutions in question will carry out treatment as laid down by the practitioner and under the supervision of the practitioner. In this event there is nothing unprofessional in making use of them.

Nemesis does not give us the reference to the case in which he considers that he was hardly treated. We can scarcely imagine it to have been on all fours with the case of Dr. H. F. Stokes.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—8.30 P.M., Clinical Meeting. Dr. P. Weber, Dr. O. K. Williamson, Dr. F. S. Palmer, Dr. W. H. Wilcox, Dr. StClair Thomson, Dr. C. W. Chapman, Dr. S. Thompson, and others: Cases, &c.

ROYAL MICROSCOPICAL SOCIETY, 20, Hanover-square, W.

WEDNESDAY.—8 P.M., Mr. J. Strachan: On Dendritic Growths of Copper Oxide in Paper. Mr. F. Enock: Nature's Protection of Insect Life (illustrated by lantern slides in three-colour photography).

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN, 17, Bloomsbury-square, W.C.

TUESDAY.—8 P.M., Mr. C. Gilling: The Constituents of Simaruba Bark (communication from the Pharmaceutical Research Laboratory). Mr. A. Gunn and Mr. E. P. Harrison: The Colouration of Adrenine Solutions. Mr. J. A. Jennings: Historical Sketch of a London Hospital, with a brief account of Hospital Pharmacy (illustrated).

SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 20, Hanover-square, W.

WEDNESDAY.—8.30 P.M., Adjourned Discussion on Dr. Prout's paper on the Rôle of Filaria in the Production of Disease. Dr. Prout: On an Unusual Cause of Dysenteric Diarrhœa in the Tropics. Dr. T. P. Macdonald (North Queensland): Tropical Lands and White Races.

INCORPORATED INSTITUTE OF HYGIENE, 34, Devonshire-street, Harley-street, W.

MONDAY.—3.30 P.M., Dr. J. W. H. Eyre: The Beneficent Bacteria—the Part they Play in our Every-day Life.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 2, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. J. M. H. MacLeod: Clinique (Skin).
TUESDAY.—4 P.M., Dr. H. Mackenzie: Clinique (Medical).
WEDNESDAY.—4 P.M., Mr. T. P. Legg: Clinique (Surgical).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith road, W.

MONDAY.—2 P.M., Medical and Surgical Clinics. Mr. Dunn: Diseases of the Eye. 2.30 P.M., Operations. X Rays.
TUESDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. X Rays. Dr. Abraham: Diseases of the Skin.
WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. 2 P.M., Medical and Surgical Clinics. Dr. K. Scott: Diseases of the Eye. 2.30 P.M., Operations. X Rays. Dr. D. Robinson: Diseases of Women.
THURSDAY.—2 P.M., Medical and Surgical Clinics. Mr. Dunn: Diseases of the Eye. 2.30 P.M., Operations. X Rays.
FRIDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. X Rays. Dr. Abraham: Diseases of the Skin.
SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. 2 P.M., Medical and Surgical Clinics. Dr. K. Scott: Diseases of the Eye. 2.30 P.M., Operations. X Rays. Dr. D. Robinson: Diseases of Women.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Cliniques:—10 A.M., Surgical Out-patient (Mr. B. Evans). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Throat, Nose, and Ear (Mr. H. W. Carson); 4.30 P.M., Lecture-Demonstration:—Dr. Pirie: Treatment of Tuberculous Conditions by X Rays.
TUESDAY.—Clinique:—10.30 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Surgical Operations (Mr. Carson). Cliniques:—Surgical Out-patient (Mr. Edmunds); Gynæcological (Dr. A. E. Giles).

WEDNESDAY.—Cliniques:—2.30 P.M., Medical Out-patient (Dr. Whipham); Dermatological (Dr. G. N. Meachen); Ophthalmological (Mr. R. P. Brooks). 3 P.M., Demonstration on Fevers (at the North-Eastern Fever Hospital, St. Ann's-road, N.): Dr. F. Thomson.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (13th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.).

TUESDAY (14th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.).

WEDNESDAY (15th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.).

THURSDAY (16th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.)

FRIDAY (17th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.).

SATURDAY (18th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed exclusively "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is specially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

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WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

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SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and generally do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, April 9th, 1908.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain-fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
April 3	29·85	W.	...	95	55	44	44	46	Cloudy
" 4	29·87	W.	0·01	87	51	42	42	45	Cloudy
" 5	29·90	W.	...	75	46	40	42	49	Raining
" 6	30·21	N.E.	0·23	94	50	41	41	44	Cloudy
" 7	30·32	N.	...	101	54	39	39	42	Fine
" 8	30·23	N.	...	98	57	35	39	41	Fine
" 9	30·07	E.	...	76	53	37	39	42	Fine

During the week marked copies of the following newspapers have been received:—*Eastern Daily Press, Evening News and Southern Mail, Science Siftings, Huddersfield Examiner, Daily Chronicle, Western Mail, Northern Daily Mail, Glasgow Evening News, Kentish Observer, Newcastle Chronicle, Southern Daily Echo, Birmingham Dispatch, Glasgow Herald, Free Lance, Westminster Gazette, Medical Press, Edinburgh Evening News, Liverpool Echo, Telegraph, Scientific American (New York)*, &c.

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